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The Elimination of the Tuberculous Cow.*

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As the majority of milk-producing cattle are tuberculous, and as comparatively few attempts up to the present time have been made to eradicate the disease from individual herds, it will be necessary at the outset, particularly as it is intended in this paper to confine our attention to the subject from the public health standpoint rather than that of agriculture, to distinguish briefly between the tuberculous cow and the tuberculous milk-producing cow.

For example, on examining a number of milk-producing herds one may, depending upon the conditions of general hygiene, housing, feeding, class and selection of cattle, etc., find all the members of certain of them apparently in a good state of health; in others one may find one or several suffering from tuberculous mastitis, pneumonia, or other condition either with or without evidence of emaciation or its onset. Having found each animal within the apparently healthy herd free from any suspicion of being a tuberculous milk producer, an extended examination of the milk supply may also give a negative result. On the application of the tuberculin test, however, one may find that more than 50 per cent. of the animals are, in fact, tuberculous. While it is true that we are referring to good class, apparently healthy herds producing the public milk supply, it is equally true that more or less than 50 per cent. of such animals are potentially dangerous, for the disease in any one of them may commence at any moment to extend and continue until the mammary gland is involved. It will be obvious then that the menace is one that is always with us. On the other hand, the agriculturist, whether he is producing milk for sale or otherwise, does not, as a rule, regard the question of tuberculosis as serious so long as he is successful in disposing of doubtfuls from time to time early enough to prevent financial loss. To eradicate the disease from any herd would necessitate the use of tuberculin. After having determined as to the number of animals diseased it would be necessary, if one wished to maintain a non-tuberculous herd, not only to provide the necessary accommodation for the purpose of isolation, but to arrange for re-testing, and subject all new animals intended to be added to the herd to precisely similar isolation and tests, besides observe all the measures necessary to prevent infection either directly or indirectly. Where the farm premises were not only structurally fit, but offered ample accommodation for purposes of isolation, the building up of a non-tuberculous dairy herd could no doubt be carried out by gradually adding to the stock from healthy heifer calves produced or reared on the premises. Perhaps one of the greatest stumbling blocks in the way of eradicating the disease is that, on the majority of farms, the facilities are inadequate for the purpose. Furthermore, many of those who really give thought to the question invariably decide on grounds of economy. Although the individual losses, due to the disease, may not in the great majority of cases cause financial embarrassment, the total loss annually within the country by death and deterioration must be enormous.

Total eradication of the disease can only properly commence on premises providing the necessary accommodation, and only then, unless with State or municipal aid, where financial considerations permit. To apply the tuberculin test to all dairy herds and then reject the use of all reactors would be tantamount to immediately cutting down the milk supply to about one half. Not only to cast adrift the apparently healthy reactors but to replace the healthy cows going dry would be a most serious problem, for newly-calved non-tuberculous cows would have to be found to take their place.

For these and other reasons the compulsory universal application of the tuberculin test does not appear at the present moment a practical proposition. Notwithstanding these facts, however, it should always be remembered that the only certain method of eliminating the tuberculous cow is that which employs that test.

As it has already been pointed out that the tuberculous cow may at any moment become a tuberculous milk producer, it should be noted that so long as we are not permitted to employ the means of diagnosis for the detection during life of all tuberculous cows, it is clearly the duty of all local authorities to concentrate on the detection of the cow producing or likely to produce tuberculous milk, besides any other clinically diseased bovine likely in any way to prejudice the condition of the milk supply.

I propose to briefly refer to the subject under the following headings, namely:—

i. Some reasons for action.
ii. Why our present method fails as a true preventive.
iii. Some suggestions.

* Presented at a meeting of the Royal Sanitary Institute, held at Newcastle-upon-Tyne, on January 16th, 1925.

Some Reasons for Action.

Although the huge toll taken annually of our meat supplies by the destruction of carcases and offal on account of tuberculosis is in itself a good reason for advocating greater efforts against the disease, it is intended on this occasion to confine ourselves more particularly to the milk supply.

During the year 1923, of something like 178 samples of milk collected by inspectors of the health department of this city and submitted for bacteriological examination, eight, or 4·47 per cent. were found to be tuberculous. Of the samples collected and submitted to these tests during the past seventeen years, according to the last Annual Report of the Medical Officer of Health, the percentage found tuberculous has been as low as two and as high as ten. During the year 1923, according to the Annual Report of the Veterinary Inspector of Birmingham, of 258 mixed samples collected at railway stations, depots, etc., arriving within that city from outside sources, nineteen, or 7·36 per cent. were proved to be tuberculous. No doubt the results obtained by many other large centres also go to prove the universal distribution of tuberculous milk. For the purpose of further directing attention to the widespread production of diseased milk one might now refer to the Tuberculosis Order of 1913.

This Order, made by the Board of Agriculture and Fisheries, came into operation on the 1st May, 1913, and was the means by which the first definite steps were taken in this country to control the more dangerous forms of the disease by requiring every person having in his possession or under his charge (i.) any cow which was, or appeared to be, suffering from tuberculosis of the udder or other chronic disease of the udder; or (ii.) any bovine animal which was, or appeared to be, suffering from tuberculosis with emaciation to give information of the fact, without delay, to a constable of the police for the area concerned or to an inspector of the local authority. The local authorities were charged with the duty of investigating reports received, with the assistance of a veterinary inspector, with a view to causing the slaughter of any animal in their district shown to be suffering from one of the specified forms of the disease. The persons notifying were also required to take precautions against the mixing of milk from suspected animals with other milk, besides being required to keep the animals under isolation pending examination by the veterinary inspector.

This Order was in operation for a period of fourteen months, when it was replaced by the Tuberculosis Order of 1914. As the latter was only in force for a few weeks, it will be more convenient to confine our attention to the previous Order.

During the operation of the Tuberculosis Order of 1913, some 8,073 animals were dealt with in Great Britain, namely, 6,671 in England and Wales, and 1,402 in Scotland, exclusive of those found on examination not to be suffering from one of the scheduled forms of the disease. Of the 6,671 in England and Wales, 1,078, or 16 per cent, were diagnosed in life to be giving tubercle-infected milk, but it is not known what percentage showed clinical symptoms of udder disease. On slaughter, however, 1,000, or 93 per cent. of them, exhibited tuberculosis of the udder. The remaining 5,599, or 84 per cent. of the whole, were returned as suffering from tuberculosis with emaciation. Of the 1,402 dealt with in Scotland, 384, or 29 per cent., were diagnosed in life to be giving tuberculous milk or to have tuberculous udders, and upon slaughter 267, or 69 per cent. of them, were found with tuberculous lesions within the udder, whilst 1,118, or 79 per cent. of the whole, were returned as suffering from tuberculosis with emaciation. These figures are from the Annual Reports of Proceedings under the Diseases of Animals' Acts, issued by the Ministry of Agriculture. Although they do give some indication as to the serious condition of some of the herds they are not wholly satisfactory, possibly due to the shortness of the period during which the Order was administered, inasmuch as they do not give any indication as to what proportion of the emaciated tuberculous cattle were found with udder disease, or what was the general condition of those either giving tubercle-infected milk or presenting tuberculous lesions within the udder on slaughter. Further, the available statistics do not give us any information either as to the proportion of cows and heifers within the country that were notified as suspected, or as to the percentage of dairy herd premises within the country in respect of which suspected cows were notified. What is known, however, is that the 8,073 animals dealt with were distributed over almost an equal number of separate farms or other premises. Therefore, it can be stated with a fair amount of accuracy that the Tuberculosis Order of 1913 caused to be officially dealt with in England, Wales and Scotland, 1,450 farm or dairy herd premises producing tuberculous milk, and about 6,500 similar premises housing tuberculous emaciated cattle. It will be obvious, therefore, that the putting into force of the Order referred to was—from the public health standpoint, besides that of agriculture—a step in the right direction.

When one is aware that, chiefly owing to notifications made by the owners or occupiers themselves, no fewer than 7,950 premises in Great Britain housing tuberculous bovines were dealt with, one is equally aware that not only would the animals notified mostly comprise those obviously ill, but would form not more than a very small percentage of those either clinically diseased or producing tuberculous milk. Moreover, it is quite certain that had it not been for the considerable pressure brought to bear upon the successive Governments of this country by the various public health authorities, the Tuberculosis Orders of 1913 and 1914 would never have been put into operation. These Orders, while in operation, because of their lacking in certain essentials regarding administrative application, merely touched the fringe of this vast subject; and since no such Order has operated during the past ten years, thousands of patients particularly children—continue to die from disease

contracted through the consumption of tuberculous milk, and the thousands that live continue to fill up the ranks of that huge army of sick and maimed, whilst no real effort is being made to arrest the cause at its source. It might now be of some advantage to offer further evidence, if that be necessary, based upon personal observations in support of the case for prevention against the potentially dangerous cow and the tuberculous milk producer.

During the past three years the writer has been fortunate enough to have the opportunity of making an extended examination, *post-mortem*, of dairy cows sent into the city for disposal. These animals were from five different herds, four of which were completely slaughtered out on account of outbreaks of foot-and-mouth disease. Four of the herds were owned by dairymen who are engaged exclusively in the milk business, and who replace the fattened-off or dry cows, going out from time to time, by new purchases at the various cow markets, and house their animals on premises other than a farm, whilst the animals from the fifth herd comprised first-class conditioned cattle from a farm upon which a number are from time to time bred and reared for the purposes of milk production. The total number of animals examined as indicated was 121, and of these 94, or 77·68 per cent, were found affected with tuberculosis. In three of the cases the mammary tissue was involved, whilst in two others the disease was such, as to extent and distribution, that these animals also may probably have been liberating tubercle bacilli along with the milk.

Not knowing when disease within an animal may extend and involve the milk produced, the presence of 94 diseased out of a total of 121 may be serious. It appears more so when we are aware that amongst the 94 were three certainly capable of producing tuberculous milk. The extent to which consumers, numerically, are exposed to the risk of infection becomes still more apparent when it is pointed out that the three cows with diseased mammæ were, along with other forty-two tuberculous animals, included amongst the fifty-nine cows which made up three of the five herds, and especially when it is remembered that it is the rule to mix the milk at dairy premises prior to distribution.

It is only when one has the opportunity of making a complete examination of the carcases in the presence of all the internal organs, arranged in an orderly manner, that one can obtain a true conception as to the percentage of animals that are diseased besides the extent to which, in each individual case, they are affected and the probable channels of infection.

Statistics obtained under these conditions, as was found on examining the 121 cows referred to, are rather different to those obtained as a result of routine meat inspection; that is to say, where the inspectors are moving from slaughterhouse to slaughterhouse, scattered over a wide area, because while slaughtering is going on within the various premises the internal organs, when removed from the carcases, are invariably mixed, and, in many cases, removed before they are inspected. Besides, many carcases are sent into the city unaccompanied by any of the internal organs. Nevertheless, within the city during the year 1923, even under this sytem, of the total number (excluding mutton) of carcases, parts of carcases and organs condemned as unfit, tuberculosis was found to be the cause in 176, or 56·23 per cent. of the cases. Of the cows slaughtered, amongst those exhibiting lesions of tuberculosis, 66·2 per cent. were partly condemned, whilst the remaining 33·8 per cent. were totally condemned as unfit for human consumption.

Undoubtedly the strongest reason of all why immediate and universal action should be considered will be found in an answer to the following question, namely:—"To what extent is the health of the community affected by the consumption of ordinary market milk?"

In briefly replying to this question it must be understood that for this purpose one means by ordinary market milk, milk containing tubercle bacilli as it leaves the cow, or milk that has been mixed with the latter before leaving the dairy.

According to the final report of the Royal Commission on Human and Animal Tuberculosis, 108 cases of tuberculosis in the human subject were investigated by that Commission. Of these, twenty-nine were those of primary abdominal tuberculosis, that is to say, cases in which the seat of infection was the intestinal canal, in other words, where some material swallowed had first reached the bowels before entering and infecting the individual. Of the twenty-nine cases, all of which died, eighteen were children between one and three years; six between three and five years; two were seven years; one fifteen years; one person eighteen years, and another seventy years. In fourteen of the cases the disease was due to the bovine tubercle bacillus, thirteen being due to the human tubercle bacillus. In the two remaining cases, one aged eighteen and the other seventy years, both the human and the bovine types of tubercle bacilli were found. Of the fourteen cases in which the disease was due to the bovine tubercle bacillus, ten were from one to three years of age; three were from four to five years, whilst one was aged eight years. Since these startling facts, established by the Royal Commission, were published, more information of a convincing character has been forthcoming.

(1) For example, Drs. Eastwood, F. Griffith and A. Stanley Griffith, found in a series of 195 children dying from all causes between the ages of two and ten years, tubercle bacilli of the bovine type in eighteen of the cases, in eighty of the cases tubercle bacilli of the human type, and in one case both types. Of the ninety-eight cases in which tubercle bacilli were found, seventeen showed bovine bacilli alone, and in eleven of these tuberculosis was the actual cause of death.

(2) In the City of Edinburgh, Dr. Mitchell carried out some investigations for the purpose of determining

(1) Annual Report of the Local Government Board (Medical Officer) 1913/14.
(2) British Medical Journal, January 17th, 1914.

the relative frequency of infection with the bovine and the human types of tubercle bacilli in cases of disease of the cervical gland of children. Seventy-two consecutive cases were thus studied, and the results obtained showed that in 65, or 86·6 per cent. of these, the bacillus responsible was of the bovine type, and in the remaining seven of the human type.

In his most exhaustive report, Dr. Mitchell in his general conclusions, states:—"The concentration of attention on the existence of human sources of infection has in the past quite overshadowed the evidence that the drinking of milk is an important factor in the infection of children with tuberculosis. Having demonstrated that a larger percentage of cases of tuberculous cervical glands in children is due to the bovine tubercle bacillus than previously believed, the need for immediate action is evident, and becomes an absolute necessity. Bovine tuberculosis can, therefore, no longer be considered a negligible factor in respect to the spread of tuberculosis amongst children, more especially since unsterilized cow's milk in this country is a vehicle by which tubercle bacilli must most frequently be introduced into the bodies of children. The powers at present vested in our local authorities are grossly inadequate, and it seems to me to be our special duty to endeavour to prevent this enormous and entirely preventable amount of tuberculosis amongst children. It is a national problem, and the earlier it is faced the more easily will it be solved."

(3) Dr. A. Stanley Griffith, at the National Milk Conference held in London in October, 1922, on the basis of more than 1,200 cases in which the type of tubercle bacillus had been determined, stated:—"Bovine tubercle bacilli play a part in the causation of all the clinical types of human tuberculosis and can produce tuberculous lesions in every organ and gland, indistinguishable from tuberculosis of human origin.

"The relative frequency with which bovine tubercle bacilli are found in human tuberculosis, varies in the different clinical forms of the disease at different age periods. It is highest in children under five years of age, and in those forms of tuberculosis which affect primarily the cervical glands and abdominal organs. In such forms of tuberculosis, the percentage of bovine infections in children under five, exceeds 80 per cent.

"In cervical gland tuberculosis and lupus at all ages infection of bovine origin accounts for about half the cases, while in bone and joint tuberculosis, genito-urinary tuberculosis and tuberculosis meningitis, diseases caused by bacilli which have been distributed over the body by the blood stream, the proportion of bovine infections ranges from one-fifth to one-sixth of the cases examined. These figures prove conclusively that a very considerable amount of disease and loss of life, especially in childhood, is caused in this country by the bacillus of bovine tuberculosis."

Why our Present Method fails.

The chief reason why our present method fails as a true preventive is that there is no attempt to apply, with any degree of uniformity, means for the detection and control of the cause of the production of tuberculous milk at its source. For example, the collection of samples of milk, either at stations, dairy premises or elsewhere, and subjecting the same to tests for the presence of tubercle bacilli, is not by any means an adequate system of protection.

(a) Because, not only the milk of which the sample formed part, but also the daily supply from the same source will have been consumed, probably in most instances for weeks before the sample has been proved tuberculous or otherwise;

(b) Because, although the sample has been proved tuberculous, the animal producing it may in the meantime be removed to some other herd and lost sight of.

It should be remembered, however, that in the absence of any well-regulated system of prevention, the collection and examination of samples of milk is most valuable as a means of demonstrating the necessity for immediate attention to the herd in question, and should be continued as a supplement even to efficient inspection.

It has already been stated that the putting into operation of the Tuberculosis Order of 1913 was a step in the right direction. To put into operation such a measure which makes it illegal to offer for sale milk from cows suffering from certain forms of tuberculosis, and at the same time places the responsibility of detecting these animals on the shoulders of the owner or person in charge, is not likely to prove an adequate safeguard, for the animals may be kept in use until accidentally detected or found by clinical examination in an endeavour to trace back a milk sample found tuberculous at some remote destination, or they may not be detected until slaughter or not at all. It will be obvious, therefore, that apart from a small proportion of cases notified under such a measure, public protection is practically reduced to one of accidental occurrence.

Some Suggestions.

According to the Milk and Dairies (Amendment) Act, 1922, the Milk and Dairies (Consolidation) Act, 1915, comes into operation on the 1st September, 1925. Article 5 (1) of the 1922 Act makes it an offence to dispose of milk from a cow with a tuberculous udder under penalty of a fine, for a first offence, of £20, and for a second offence, of £100, or to imprisonment, with or without hard labour, for a period of six months, or to both such fine and imprisonment, whereas the 1915 Act makes it an offence not only to dispose of for human consumption, but also to allow to be used in the manufacture of products for human consumption, milk from any cow giving, or likely to be giving, tuberculous milk, or suffering from certain conditions other than tuberculosis, including actinomycosis, anthrax, foot-and-mouth disease, etc., etc. Article 1 (1) of this Act empowers the Local Government Board (Ministry of Health) to make general or special Orders for practically all the purposes (which include the inspection of cattle) required to secure—if carried out along with a Tuberculosis Order—a wholesome milk supply.

(3) The Journal of Comparative Pathology and Therapeutics, vol. xxxvi., p. 164.

Whenever the Acts referred to and any Orders made by the Ministry of Health come into operation, an Order similar in effect to the Tuberculosis Order of 1914, of the Ministry of Agriculture, should come into force at the same time.

It is absolutely essential in any attempt to secure a wholesome milk supply to have all clinically tuberculous cattle removed from dairy herds, and this cannot possibly be done without regular veterinary inspection of all dairy cattle throughout the country. Under the previously mentioned Acts, not only are local authorities permitted to do this, but the Local Government Board (Ministry of Health) is empowered to make Orders to enforce it. As to how often, annually, the dairy herds should be examined will depend upon whether the inspection is universal or otherwise. In any case, the herds should be examined at least once every three months, and it should be made compulsory for every dairyman to notify the local authority upon the arrival of any new animal into his herd. I would also strongly urge that it should be made illegal to offer for sale, whether publicly or privately, any cow which has been "stocked" or "hefted," either by temporarily stopping up the teat canal, or by deliberately withholding the normal operation of milking. At all times the application of the tuberculin test, the removal of all tuberculous cattle, and the building up of tubercle-free herds should be encouraged by legislation or otherwise. The organisation and supervision of the work under the Acts and Orders of the Ministries of Health and Agriculture referred to, besides those Orders of the Ministry of Agriculture relating to other diseases than tuberculosis, including those set out in the Second Schedule of the Milk and Dairies (Consolidation) Act, 1915, of the Ministry of Health, will require careful consideration.

When such control has been operating for some time, the condition of the herds would probably become such that still greater measures could be adopted for the purpose of increasing the number of those tubercle-free. At a later stage it might then be practicable, both from an administrative and financial standpoint, to completely rid certain defined areas of bovine tuberculosis without unduly depleting the public milk supply, and at the same time provide non-tuberculous animals in sufficient numbers to also meet the demands of many dairymen whose only premises are town cowsheds. It would appear certain that, having regard to all the circumstances, the progress of eradication of bovine tuberculosis will be slow. Nevertheless, it is not impossible, providing great perseverance be exercised by all concerned, for great strides to be made in that direction.

It should never be forgotten, however, that the results we all desire will be attainable only in the inverse ratio as to the completeness and regularity of inspection and, incidentally, the promptness with which the disease is dealt with at its source. In the way indicated, and in no other can we hope to arrive at a stage of affairs when it can honestly be said that we are attempting to eliminate the offending cow, and thus prevent one of the completest and most valuable of all foods becoming charged with the germs of a dangerous disease.

Hints to Beginners.

Now that the festive season is over, the newly qualified veterinary surgeon will have to commence seriously to think of making a living for himself. There are several paths open to him: he may seek an appointment, and he may be unlucky; he may seek an assistantship, and his employer may be unlucky; or he may seek a practice, when his clients may be unlucky.

Firstly, a word to those seeking posts as assistants. The writer was once newly qualified, he was more than once an assistant and he retains recollection of his own importance at that period of his career, but he never knew (until lately) exactly to what extent his employers estimated him, because, like all other veterinary surgeons of great experience, they had matured into Christian gentlemen of much forbearance, who suffered fools gladly and assistants sadly.

Having now arrived at this stage himself, the writer proffers a few hints to some of those gentlemen whose offers of assistance weekly adorn the pages of this journal. The first commences with the advertisement—on second thoughts, as advertising is "infra dig," let us repeat "offer of assistance." This is how it should be worded:—

"Recently qualified veterinary surgeon seeks situation where he may gain experience. Non-motorist. Salary of secondary importance." Such an offer saves considerable disappointment to both parties concerned at a later date, and is, at least, more honest than some of the literary effusions of the newly-fledged.

The second point concerns only those gentlemen whose engagement has extended into its second week. Few practising veterinary surgeons are philanthropists, whilst all deserve your pity. The "three guineas, live in," you have secured, represents at least ten sovereigns in hard cash each week out of the employer's takings, and whilst, no doubt, your presence is impressive to clients, it will have no opportunity to remain so unless by your own efforts you are capable of adding a like sum to the ledger each week. Never forget that you have the best berth in the ship, but also remember that the practice is not *all* yours—yet.

To those eager to commence practice on their own account, Mr. Punch's famous advice to those about to embark on an equally risky proposition applies also, but it is offered—like most other good advice—at least four years too late to be of great service.

Apart from the treatment of patients, the recent graduate has yet to learn to treat his clients, in order to secure—and retain—their confidence. The art of treating clients is in reality a gift; sometimes it may be cultivated, but in either case, it dispenses with the need of acquiring any further knowledge of treating the patient. Many practitioners take advantage of this fact.

There is, however, an old adage, "First catch your hare," and, bearing this in mind, the treatment of possible clients becomes more worthy of study.

You may imagine, when your first victim consults you, that he is either impressed by your qualifications or is a sound judge of character, whereas, it will probably be that he already owes an account to your nearest

confrère and has no intention of paying it. When he vehemently abuses the said gentleman, your fears may be confirmed. On the other hand, it is possible that your client *has* estimated your character and is in search of unsophisticated youth, for some reason, possibly shady, best known to himself. The young and unattached usually acquire a clientèle of which the fair sex preponderate. Safety here lies in numbers. Many people, too, are fickle and always eager to try out the newcomer; they are seldom satisfactory clients and may usually be recognised from the first by the loudness of their voices. Others may seek your services because (i) you may be cheaper; (ii) you may be more fortunate (they hope), or (iii) you may be more attentive.

Being less busy than your neighbours and, so far, less bored, you will possibly fulfil the third requirement; the second also, if you are wise; and the first if you are not. The most satisfactory clients will be found amongst those who come to you because you are nearer and because they are in a great hurry. The results of your treatment of these clients and these patients, will probably make or mar your reputation, and from this little centre your fame must radiate.

Recommendation is the keynote to success, but it is preferable that it come from the client, rather than from the practitioner. You will, of course, suppress undue publicity to the best of your ability. For instance, suppose you specialise in feline surgery, let us imagine you have been successful in removing the dexter testicle from the feline male at the remarkably early age of ten days, or have succeeded in growing hair where no hair grew before, after Christian Science and the local chemist have failed miserably, it will be quite sufficient to allow your clients to discuss the matter privately, and, although the achievement will undoubtedly cause a considerable stir, you will, of course, take particular care that it does not come to the notice of any person interested in the publication of journals devoted to feline interests. Editors being always hungry for copy, are liable, on the least provocation, to record such professional exploits, and it would not be at all surprising if one of these enterprising gentlemen, left to his own devices, spread the account out in serial form, ending each week in a blood-curdling episode. Any such tendency should be checked at the outset before your name becomes a household word, lest any of your confrères should unjustly assume that you are not averse to publicity.

The ability to retain clients lies in securing and maintaining their confidence and respect. To do this, we must retain our own; remembering, at all times, that we are professional gentlemen and that the front door is nearer the gate than the tradesmen's entrance.—"PRACTITIONER."

Mr. James Lindsay, M.R.C.V.S., Dumfries, has been appointed the Clydesdale Horse Society's veterinary inspector for 1925.

The Veterinary Record.

14th February, 1925.

MEAT REGULATIONS.

The meat regulations issued by the Ministry of Health come into operation on April 1st, 1925. They apply to slaughter-houses, meat marking, stalls, shops and the handling and transport of meat. Part I.—General, defines the meaning of certain words, *e.g.*, "Ministry," "Local Authority," "Medical Officer," "Inspector," "Meat," "Slaughterhouse," "Stall," "Room," and "Vehicle." Each Local Authority *shall* enforce and execute the provisions of the regulations in their district. Part II.—"Slaughterhouses and Slaughtering," and Part III. "Meat and Marking" appear to be the only sections which are of special interest to veterinary surgeons. The Departmental Committee on Meat Inspection, in their report, page 16, section 22, stated: "The ideal staff for meat inspection work would consist of men possessing a considerable knowledge of pathology, both human and animal, but the cost of such a staff would be prohibitive.

"The alternative is in the direction of a staff of officers of two grades, *viz.*:—

"(*a*) Lay inspectors.

"(*b*) Expert meat inspectors appointed for a large area who would generally supervise the work of the lay inspectors and who would assist in cases of difficulty.

"In many of the larger towns veterinary work in connection with the milk supply and tuberculosis among cattle has resulted in the appointment of a veterinary officer attached to the Health Department, and to these officers might well be given the duties of the expert meat inspector.

"In the rural and smaller urban districts it would be advantageous if the services of the County veterinary officers, appointed for similar purposes to those in the larger towns could be utilised for the purpose, and we hope that the County Councils, whose officials already co-operate with those of the smaller local authorities in various other matters, would be willing to facilitate such an arrangement where circumstances permit it.

"The same report on page 18, section 26, states:—

"In order to give effect to our recommendations, the existing law needs to be amended so as to give to the veterinary officer appointed for the purpose of meat inspection or to a meat inspector who is not a sanitary inspector, the statutory right to enter premises

and inspect and seize unsound food, which at present, rests only in the medical officer of health or the sanitary inspector or inspector of nuisances."

It was anticipated, in view of the above recommendations, that when the regulations previously referred to were issued, they would be so drafted that Local Authorities could appoint veterinary officers who, as in Continental countries, would act in urban and rural districts, either as full or part time officials, having as duties the inspection of cows and cowsheds in reference to tuberculosis (especially tubercular mastitis) and also as inspectors of meat and slaughter-houses. It will, we submit be generally admitted that veterinary surgeons and specially the younger members of our profession are eminently fitted to carry out those duties, and on looking at Part 7, General (14) of the Regulations it would appear that the Local Authorities can do so, as it reads:—

"The Medical Officer of Health, the Sanitary Inspector *and any other officer of a Local Authority or Port Sanitary Authorities duly authorised by the authority in writing*, shall, for the purpose of ascertaining whether these regulations are being observed have power at all reasonable times to enter and inspect any slaughter-house, room or other place, and any stall or vehicle to which these regulations apply." But on a careful perusal of Parts II. and III. we observe that the officers given power to inspect meat and also stamp it, is an "Inspector of the Local Authority." Turning again to Part I. General, we find "Inspector" defined as the Medical Officer of Health, or any other officer of a Local Authority having, under the Acts relating to Public Health, or any Local Act, *power to inspect and examine meat intended for the food of man.*

Under the Public Health Act, 1875; Sections 116 to 119, the power referred to is vested in the medical officer of health, and the inspector of nuisances (now entitled sanitary inspector), and in the Public Health (London) Act, 1891, Section 47, the power is vested in the same officers.

It will therefore be observed that, unless we are in error in interpreting the regulations, a veterinary surgeon, if appointed as an officer of the Local Authority, would have no legal *locus standi.*

It would appear, then, that some action should, before the regulations come into operation, be taken respectfully to call the attention of the Ministry of Health to the defect and ask that the interpretation of the word "Inspector" should read similar to the Scottish regulations, *viz.*:—"The medical officer of health of the area," or "the veterinary surgeon approved by the Local Authority for the purposes of those regulations," etc. etc.

We await this action before discussing the benefits accruing from a proper working of those regulations.

CLINICAL AND CASE REPORTS.

White Heifer Disease.

By O. STINSON, Appleby.

Occlusion of the vagina in front of the urethral orifice, at the situation of the hymen, is seen usually in white heifers, sometimes in roans, and occasionally in reds; mostly, or perhaps almost exclusively, in Shorthorns. *Typical case.*—The heifer is suddenly noticed straining or may have being doing so slightly for perhaps a week before the serious stage, when she will be disinclined to feed on account of the pain. On examining the vagina with the hand in the rectum, the former will be found to be fully distended with fluid, in amount varying from one to several gallons. In some cases, but not usually, the uterus may also contain fluid.

Atypical types. The writer has no hesitation in calling the following cases "white heifer disease" since, in his experience, the same averages work out with regard to the colour of the subjects, apart from the fact that the membrane is found in the vagina as in typical cases of the disease, or at least the remnant of the membrane in the last type of case which will be mentioned.

A. *In the bulled heifer.* The heifer is bulled and within a few hours, or in a day or so, she starts to strain and perhaps bleed from the vagina. She is usually off her food.

B. *In calving heifer.* The heifer has been calving for some hours, but the posterior portion of the vagina has not dilated. On examination with the hand the membrane will be found to have a hole in it large enough to allow two or perhaps three fingers to pass through; the calf is found up against the membrane.

C. *Localised vaginal necrosis.* Usually laterally situated at the margin of the membrane and infecting the deeper layers.

A CASE DESCRIBED. A white heifer calved a week ago with the help of one man; *not difficult*, but was assisted, as is often the case. All went well for the week following parturition. The first symptom noticed was tenesmus. On examination of the vagina a patch of tissue was evidently becoming detached; this was gently separated with the fingers and taken away. On further examination, it was found that the hand could be got through the hole left by this slough, beyond which was a cavity with a piece of disorganised tissue at the bottom, with several gallons of very offensive fluid around and above it. The tissue and the fluid were taken away, the cavity being washed out several times at intervals with antiseptic solutions. She made a good recovery. There was metastatic trouble, and one hock had to be lanced and treated for a few days. I am well aware of the fact that similar cases occur after *difficult* cases of parturition in cattle.

D. *Incidentally found at time of removing heifer's cleansing.* A somewhat constricted entrance to the vagina, and thickening around vaginal wall, being the margin of a ruptured membrane.

Treatment of a typical case. Evacuation of the accumulation of fluid and obliteration of the membrane is essential. The vagina of a heifer is frequently too small for the introduction of a hand, at least to give any freedom for the hand introduced to work. It is an easy matter to evacuate the fluid by introducing a trocar and cannula, as used for the rumen, and in a case where one can get the hand into the vagina there is no better instrument. It is important not to let the heifer push the trocar out while straining, particularly when most of the fluid has been got rid of, as the only guide one has when introducing the trocar is the dilated vagina felt with the other hand in the rectum, it would be easy to pierce either side of the vagina without this tensely filled closed vagina. As it is necessary to do away with the membrane after evacuation of the fluid, one must be able to find the spot where the membrane was pierced; for this purpose it is an excellent plan to tie a large knot in a piece of strong string so that it can be just pushed through the trocar whilst still piercing the membrane. After evacuation of the fluid all that it is necessary to do is carefully to pull the trocar out whilst being very careful not to let the string come with it. After taking out the trocar, follow up the string with a well-greased arm and hand, push the hand carefully through the membrane where the string goes through it; having got the hand through and pulled out with the fist clenched, the important part of the treatment is finished. It is now only necessary to insert antiseptic pessaries. I have found nothing to give as good results in septic conditions of the vagina and uterus as pulv. iodoform in gelatine capsules.

In a case where it is impossible to get the hand into the vagina so that it can be of use, it is necessary to use a piercing instrument which is also capable of being opened from the outside properly to rupture the membrane. If the membrane is not done away with after (or before) evacuation, but only pierced, fluid re-accumulates and there will be more or less tenesmus and wasting; it may be necessary, on account of the size of the vagina, to allow it to re-accumulate to the full extent, to serve as the only reliable and safe guide, as above explained. In the meantime sepsis may have set in and the case become very serious.

Atypical case, A. In these cases there is no accumulation of fluid as in a typical case, but injury to the membrane, causing irritation alone, in the simplest case. Iodoform capsules put this right. Sometimes the membrane becomes pierced by the bull, usually at the top; these cases may bleed and a clot form in front of the membrane, causing straining. In this case the membrane must be obliterated, the clot removed, and antiseptics used. In those cases of this class which have not bled in front of the membrane after being pierced by the bull's penis, although straining is in evidence for days after service, it is possible for them to prove in-calf. Consequently at parturition they take the form of of Atypical cases, class B.

Atypical case, B. The membrane has to be broken down and the calf extracted. It usually requires the aid of about four men. Chloroform (1 to 1½ ounces) assists matters, saves the heifer a considerable amount of shock, and at the same time allows sufficient labour pains to indicate when to apply traction. In these cases the cleansing should be removed at once, if practicable, or as soon as possible, unless specially contra-indicated.

NOTE.—I have on record cases of typical white heifer disease subjects, one in as bad a case as possible, when many gallons of fluid were taken away and the membrane ruptured. Some weeks afterwards she was served and stood to the bull, and had a heifer calf. I have several times had the disease more than once on the same farm. There is no doubt that it is hereditary, and one cannot but think that, in these days of treating sterility in cattle, we are actually breeding the disease. It is always our duty to advise the owner not to try to breed from these cases of white heifer disease which have been treated, but unfortunately it is left in his hands. It was so in the above-mentioned case.

A Case of Anthrax.

By ARTHUR NEW, M.R.C.V.S., Ashton-under-Lyne.

I have been much interested in the discussions that have taken place upon this subject, and particularly in the statements made that cases of this disease are not reported as often as they should be. I will give particulars of a case that was within an ace of not being reported.

On September 27th last, I was called to a case of milk fever at a farm where I had attended the stock for 35 years without any case of anthrax occurring. I found the cow, which had been calved about a month, down on her side, with hind legs stretched out stiff, champing of the jaws, frothing a little at the mouth and generally showing the symptoms of milk fever in its advanced stage.

I had the udder immediately inflated, and before two of the quarters had been dealt with, the animal gave two deep sighs and expired. I looked round the body for any suspicious appearances and as I noticed none I concluded that she had died from exhaustion. After a short conversation with the attendant I was on the point of leaving the shippon, when my attention was called by a retired farmer—who had been assisting us—to some blood that had commenced to trickle from the anus.

I had the place locked up and returned to Ashton for microscope, etc., and upon the examination of a blood specimen I found a large field of anthrax bacilli. The case was reported to and confirmed by the Board of Agriculture.

If I had been called in half an hour earlier, the case would have been treated as one of milk fever and I should have left the farm with the promise to call in the morning, quite expecting to find the cow up and doing well. Instead of that, as the case turned out, I should have been advised by 'phone that the cow was dead and the carcase would have been sent to the knacker's without any suspicion on my part that anthrax existed.

ABSTRACTS AND REVIEWS.

[**Traité de Medécine des Animaux domestiques**, par M. P.-J. CADIOT, Membre de l'Académie de Médecine, Directeur honoraire de l'Ecole nationale vétérinaire d'Alfort, G. LESBOUYRIES, chef des Travaux cliniques à l'Ecole vétérinaire d'Alfort, J.-N. RIES, vétérinarire du Grand-Duché de Luxembourg. 8vo., 968 pages, 50 fr. Vigot Frères, 23 rue de l'Ecole de Médecine, Paris].

This treatise is divided into four parts. In the first the authors describe for each different apparatus the affections of the organs which enter into its constitution or are annexed to it. The second comprises *diseases of the blood* and *nutrition*. The third reviews the principal intoxications and auto-intoxications, and the last section deals with the specific infectious diseases which constitute the class of contagious diseases or epidemics.

The different diseases or infections are dealt with in order according to their frequency, their importance, and their interest from the clinical and practical point of view. Readers will find in this work an exposition of recently acquired knowledge concerning endocrinology, a study of the disturbances affecting the different internal secretionary glands, and a description of the rôle of the sympathetic nervous system in the causation of a large number of morbid states, showing their importance in the realm of internal pathology.

An interesting innovation is the placing, at the head of each chapter, of a brief general statement of the more important ideas of general pathology, and of semiology, together with the rules to be followed for a proper observation of patients, leading to practical deductions, and ultimately to a correct diagnosis and the institution of rational treatment.

These general head notes bring together the *data* to be found in the text books relating to the different branches of pathology, correlating these and explaining the mechanism of functional disturbances and the symptoms which they reveal.

This treatise, written by authors who know the difficulties of practice, can be strongly recommended as a most useful book, both for Veterinary Surgeons and Students.

Animal Parasites and Parasitic Diseases. Fourth Edition, Revised, by B. F. Kaupp, B.S., M.S., D.V.M. (Published by Baillière, Tindall & Cox, London, 1925. Price 12s. 6d.)

This work is divided into four chapters dealing respectively with External Parasites, Internal Parasites, Protozoa, and Preparation of Specimens. There is also an addendum on the present state of our knowledge of the Chemistry of Animal Parasites.

The first three chapters deal with a large number of the animal parasites commonly met with in practice in this country, but in some cases it is difficult to

(*Continued at foot of next column.*)

Royal College of Veterinary Surgeons.

SPECIAL MEETING OF COUNCIL.

A special meeting of Council was held immediately following the Quarterly Meeting of Council R.C.V.S. held on January 9th. Mr. S. H. Slocock (President) occupied the chair, and the same members were present as at the Quarterly meeting.

The minutes of the previous meeting, which had been printed and circulated, were taken as read and signed as correct.

Sir JOHN M'FADYEAN moved:—

> "That the second sentence in Bye-Law 59 cease to have effect after 31st January, 1925, except in the case of students who have begun their attendance at one of the affiliated schools before that date."

In doing so he said: The particular part of Bye-Law 59 which will be altered, is the one in which we take power to ourselves to give exemptions or concessions to students who have served in His Majesty's Forces during the war. The effect of the alteration will be to bring that to an end at the end of the present month, except in the case of students who have already begun their attendance at one of the affiliated schools. I move the alteration.

Mr. COLEMAN seconded the motion, which was carried unanimously.

The following motion stood on the Agenda in the name of Mr. Coleman:—

> (1) That a Selection Committee be appointed, with instructions that all members of Council should be selected to serve on not less than two and not more than three of the Committees of the Council of the R.C.V.S., excluding the Registration Committee, and the report to be submitted to the Council of the R.C.V.S. for approval.
>
> (2) That no member be selected to serve on a Committee for more than three years in succession unless by the unanimous vote of the Council it be deemed necessary in the interests of the College.
>
> (3) That in Bye-Law 45, line 4, the word "and" between "Parliamentary" and "General Purposes" be deleted and the letter "A" be substituted."

Mr. COLEMAN: With regard to the motion standing in my name, with your permission I should like to withdraw parts (1) and (2). The difficulty referred to in parts (1) and (2) has been overcome by the action of the Chairmen's Committee, with which I

(*Continued from previous column.*)

follow the author's reasons for the selection or omission of certain of them.

The nomenclature used in the chapters dealing with the Helminth and the Protozoa is often not that in common use to-day, but in most cases a synonomy is given.

We do not think this book is of any especial value, either to the practitioner or the laboratory worker.

It is in demy-octavo size, and runs to 250 pages of text, with 81 figures and 15 plates.

quite agree. The only object I had in view in bringing the motion forward was that it appeared to me that the election of the Committees in the past had been too hurried and done in too casual a way; and members who were unfortunate enough to be elected upon certain Committees upon the resignation or death of their predecessors, had to serve on it for life and were never put on another, which I do not think is fair. With your permission I will withdraw clauses (1) and (2). (Permission was given for clauses (1) and (2) to be withdrawn). I would, however, still like to propose the alteration to Bye-Law 45 as set out in resolution No. 3. It means in other words that there will be a Parliamentary Committee and a General Purposes Committee. The work of these two Committees seems to me to be increasing and there is quite enough work for two Committees to do. I think the members of that Committee will recognise the truth of that statement.

I beg to move the resolution.

Mr. CARTER: I second the motion.

Colonel BRITTLEBANK: This matter was discussed at very considerable length by the Committee of Chairmen held yesterday, and it was finally decided that the time was not yet ripe for the division as proposed by Mr. Coleman. Probably that Committee was right, although I must confess that for some considerable time I have been of opinion that a considerable re-distribution of the work of the Committees of this Council was necessary. I find myself however, in some difficulty in speaking to this motion, in that I must be loyal to the findings of the Committee, to whose work I subscribed yesterday. It seems to me that this Chairmen's Committee has only just begun to function. It is a Committee which is likely to achieve a great deal in regard to the re-distribution of work and the question of the consideration of the allocation of work to Committees, but the decision of the Committee was correct that the time is not yet ripe for the formation of an extra Committee. At the same time I wish to say that I do not think it will be very long before it will become necessary to carry out what Mr. Coleman has proposed. I suggest, Sir, that as the Chairmen's Committee has been taking a serious review of the work of the Committees, it should be given an opportunity of seeing what re-distribution is necessary before arriving at a decision of this sort.

Dr. BRADLEY: I think we had better wait until the Chairmen's Committee has got into proper working order. I quite admit that the nature of the business brought before the Parliamentary and General Purposes Committee is very varied. It is an amorphous kind of work, but it seems to me that in the meantime we might let it continue until the Chairmen's Committee has had an opportunity of making a better allocation of work. It is quite feasible that the Chairmen's Committee may take hold of some of the work that falls under the heading of "General Purposes."

Major SIMPSON: It seems to me it would be a pity, in view of the examples that we have had before us

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at this and previous sessions of the Council, to create more Committees if we can possibly help it. I agree with previous speakers that it would be a good thing to give the Chairmen's Committee a chance of really thinking this matter out. In my view, it would be far better to make a Finance and General Purposes Committee, because nearly always general purposes matters relate to expenditure and finance. All those matters of finance will have to be submitted to the Finance Committee and go on from them to the Council. That is a suggestion, as it were, but I am in agreement with the previous speakers that the Chairmen's Committee should have a chance to think this over and lay a further scheme in front of us.

Mr. COLEMAN: Sir, after hearing what has been said to-day, I am quite willing, if my seconder agrees, to withdraw the motion.

The resolution was then withdrawn.

On the motion of Mr. McKinna, a hearty vote of thanks was accorded to the President for his conduct in the chair, and the meeting terminated.

DIVISIONAL REPORTS.

Mid.-West and South Wales Division.

ANNUAL GENERAL MEETING.

There was a capital muster of members for the annual general meeting of this Division, which was held at the Royal Hotel, College Green, Bristol, on Friday, January 16th, 1925. The new President, Mr. A. E. Roberts, of Chepstow, was fortunate, upon his initial occupancy of the chair, in the presence as lecturer, of Dr. J. Stanley White, whose illustrated address on "Veterinary Biological Products," made the occasion a memorable one. A noteworthy feature of a fascinating lecture was the exhibition, for the first time in this country, of a cinematograph film, depicting scenes in the routine work of the Parke Davis biological product laboratory, Detroit.

The meeting was followed by what is always a most enjoyable "Mid-West" function—the annual dinner.

The retiring President, Mr. L. J. Perry, tenanted the chair at the commencement of the proceedings, and the attendance book was also signed by Messrs. Adams, Armstrong, Barker, Berry (*Visitor*), Brown, Coleman, Gallie, Hall, Henson, Hewer, Livesey, Masheter, Pike, Powell, Moore, Rees, Roberts, Savage, B. Sayer, E. Sayer, Scott, Seldon, Slocock, Turner, Watson and Williams.

The *minutes* of the previous annual general meeting were read, confirmed and signed.

Prior to the presentation of reports, the PRESIDENT made reference to the loss sustained by the Division in the death of Mr. R. Porch, of Bristol. Mr. Perry said: Since our last meeting, one of our founders has passed away. It is sad to reflect that since, only five years ago, twelve veterinary surgeons met in this room and we formed this Association, four of that number have joined the great majority. Mr. Porch

was a very energetic member of the Association and I am sure we all feel his loss. The Secretary has written, on behalf of the Association, a letter of sympathy to the widow and children. At the funeral the Association was represented by Mr. Henson and myself, and a wreath was sent on its behalf. The meeting passed, standing and *sub silentio*, a vote of sympathy with the relatives.

REPORTS.

The SECRETARY read his report on the activities of the Association for the past year, as follows:—

As you are aware, it was decided at our last annual general meeting that in future the Association's year be from January 1st to December 31st, and that the quarterly meetings be held on the third Friday in January, April, July and October, instead of the first Thursday in these months. Certainly this has prevented our meetings clashing with the quarterly meetings of the Council of the R.C.V.S. and N.V.M.A.

In consequence of these alterations, we have only had two quarterly meetings since our last annual general meeting.

At Bath in July, Major F. Hobday and Major Frank Chambers gave some most interesting and successful surgical demonstrations, and at Cardiff in October, Mr. Norman Bissett, of Cardiff University, prepared a paper on Tumours. To these gentlemen the association tenders its best thanks.

Two meetings of Council have also been held.

At the request of the National, who are very anxious that there should be a uniform scale of fees paid to Veterinary Inspectors for work under the Diseases of Animals' Act throughout the country, a meeting of Veterinary Inspectors in the area covered by this Division, that is, Somerset, Wilts., Hereford, Glamorgan, Pembroke, Brecon, Carmarthen, Monmouth and Gloucester, was held on November 14th, at Bristol, after all Veterinary Surgeons in these counties had been circularised regarding the meeting and terms of reference. There was considerable discussion as to the fees paid by the various County and Borough Councils, and it was unanimously agreed to recommend to the National, that the fees as paid by the Glamorgan County and Borough Councils should be the uniform scale of fees paid by all County and Borough Councils.

We have to mourn the loss of a very highly esteemed member, Mr. R. Porch—undoubtedly the hardest blow the Association has yet suffered, who passed away on December 22nd, 1924.

He was a first Vice-President of this Association, and took the greatest interest in its welfare since its inception. He was able, owing to his previous experience with the "Central," to give many valuable hints during its formation, and was a regular attendant at both Council and ordinary meetings, taking part in all discussions, especially when appertaining to the good of the profession in general and our Division in particular. We cannot but feel his loss acutely, and it will be a difficult matter to fill the breach left by the passing of such an active and keen member. His widow and children have our sincere sympathy.

Mr. Proctor, of Hereford, Mr. W. J. Leyshon and Major F. J. Taylor, of Bath have sent letters of resignation. Mr. Leyshon is now with Professor Buxton at Cambridge; we wish him every success. Mr. Proctor is leaving the district, and Major Taylor has done so.

In conclusion, gentlemen, I do not think we are gaining as many new members as we have a right to expect. I was very surprised to find many in our area who were not members of this Association, when sending out the circulars regarding the Inspectors meeting, and I feel we should make an effort to obtain many of these gentlemen in the near future. It is also noticed that many old faces of one time regular attendants at our meetings are missing. We hope these gentlemen will be able to join us during the coming year, and assure them of a hearty welcome.

The report was received and adopted and the resignations mentioned therein accepted with regret.

The TREASURER (Mr. A. S. Adams), submitted the following report:—

In submitting the Financial report for the period from 1st April to the 31st December, 1924, I would state that we changed our financial year to make it cover from the 1st of January to the 31st of December in each year in the future.

We commenced the year with a credit of £29 0s. 8d. and we finished the year with a credit balance of £44 10s. 5d.

Income.—I find that there are twenty members in arrears of subscriptions. I have sent each gentleman a very polite reminder of the sum due, and a stamped addressed envelope. I may say that I secured a considerable number of replies by this method, but there are still the number stated of subscriptions outstanding.

Our income is reduced from the previous year by £12, but you will be pleased to know that our expenditure, as compared with the previous year, has been reduced by £23. In regard to the latter item, this is affected largely by the extremely low cost of the quarterly meetings, due principally to the generous hospitality of those gentlemen at Cardiff and Bath.

There is no doubt, gentlemen, that this Association can be a financial success if we receive our due income, and by having cash in hand it is possible for your Council to arrange more demonstrations, which are the principal items in our annual expenditure.

Regarding the Association's Benevolent Fund. A statement is also before you showing its position to-day. The balance on April 1st last was £59 1s. 6d. and during the period from April to December, I have myself placed £60 to its credit. A second £100 of Consols has been purchased and still leaves a balance of £63 1s. 0d. This is a Fund which I should hope to see grow until our financial position would warrant our doing what we would wish to do for those who, by no fault or reason of their own, are in financial difficulties.

In conclusion, I may say that, as your Treasurer, I forwarded this year to The "Field" Distemper Research Fund, a sum of £52 10s. 0d. collected by me from followers of the Berkeley Hounds. This, I am sure you will agree, is a handsome donation to a worthy object.

I would draw your attention gentlemen, to the fact that there are no postages included in this balance sheet. I know this must be a considerable item to our popular and

energetic secretary, and I can only say that you will save me a good many shillings by paying your subscriptions promptly. They are due to-day and I am waiting and willing to receive them.

The President, in moving the reception and adoption of the report, said they would all agree with him that the statement of accounts revealed a very satisfactory financial position. Their Treasurer was the originator of their Benevolent Fund and was still evidently also its mainstay, and he thought on this account also their heartiest thanks were due to him. The report was adopted and, on the proposition of Mr. MOORE, seconded by Mr. WATSON, Mr. Adams was accorded an enthusiastic vote of thanks for his activities on behalf of the Benevolent Fund.

CORRESPONDENCE.—Apologies for absence were announced from Messrs. Austin, Delacherois and Thorburn. A letter from the Royal Sanitary Institute, inviting the Division to send a delegate to its Congress to be held at Edinburgh from July 20th to 25th was considered, and it was agreed to pay the delegate's fee for attendance and to appoint as delegate, Mr. Roberts, who was likely to be North at that time. Mr. Hall to deputise in the event of Mr. Roberts being unable to attend.

New Members.—Messrs. K. Dawson, J. G. E. Gallie and G. Campbell Hill were elected members of the Division.

ELECTION OF OFFICERS.

PRESIDENT: Mr. A. E. Roberts.

On moving, from the chair, the election of Mr. Roberts, the retiring President, Mr. Perry, said he wished to thank the members most heartily for the warm support they had recorded him during the year. It had been a great pleasure to him to be their President. During the year he had attended, as their representative, meetings of the Royal Counties Division at Swindon, of the Western Counties Division at Taunton, and of the "National" at Aberdeen, and the warmth of his reception, in the capacity of their President, at those gatherings had been most gratifying. He could assure them that their Association was held in very high esteem by the other Associations and by the "National." (Applause.) It was now his pleasant duty to place before them, as his successor, the name of Mr. A. E. Roberts, who, he was sure, would very worthily uphold the dignity of the chair and guide the Association through a successful year.

Mr. ROBERTS, in taking the chair amidst applause, briefly returned thanks for the honour bestowed upon him by the Division. He accepted that office with a certain amount of diffidence, knowing that he had such illustrious predecessors, but he would do everything in his power to carry out with success the duties devolving upon the occupant of the Presidential chair.

Vice-Presidents:—Messrs. Barker, Hall, Perry and Seldon.

Hon. Secretary:—Mr. J. J. Aveston. In proposing, the PRESIDENT paid a tribute to the long and splendid service rendered the Division by Mr. Aveston in the capacity of Secretary. That gentleman conducted the affairs of the Association to their entire satisfaction. (Hear, hear.).

Hon. Treasurer: Mr. A. S. Adams. This re-election was also utilised by the President for the eulogising of the efforts put forward by the holder of the office on their behalf.

Council:—Messrs. Adams, Barker, Coleman, Hall, Henson, Hewer, Masheter, Moore, Rees, Sayer, Scott, Seldon, Veitch and Watson. (President and Secretary *ex-officio*).

A hearty vote of thanks was accorded Mr. Perry for his conduct in the chair during the past year.

MORBID SPECIMEN.

Mr. A. S. ADAMS: I wish to bring to your notice this specimen in connection with a very interesting case in the horse. The animal in question was being hunted seven weeks ago and I was hunting beside him. At the last draw the horse jogged sound away from the cover, and he went home sound, and was all right when seen at 9 o'clock that night. Those occupying rooms over the stables heard no sound during the night, but in the morning the horse was found on three legs. I was called at once and diagnosed a fracture near the elbow. The horse was fifteen years old and a great favourite with his owner, Lord Berkeley. I deemed the case of sufficient importance to warrant a consultation and I selected two members of this Association. They agreed with the diagnosis and we kept the horse alive for seven weeks. Then, however, as I could see that ulceration was taking place, I had the horse destroyed, so that the bones should be ready for exhibition at this meeting. He undoubtedly was suffering from colic on the morning when found lame. It was extraordinary that the people on the premises heard nothing during the night. I should be glad to hear if any gentleman has had a similar case.

No comments being forthcoming, the PRESIDENT extended a cordial welcome to Dr. J. S. White, of Parke, Davis and Co., and called upon him to deliver his lecture.

VETERINARY BIOLOGICAL PRODUCTS.

Dr. WHITE, who was enthusiastically received, then delivered his address, which was illustrated by a large number of excellent slides. In the course of his remarks Dr. White said that when he heard that Mr. Scott, of Bridgwater, was to open the discussion he had almost decided to commence his address with some observations on the theories involved in the use of serums, vaccines, bacterins, etc. He had got together some data dealing with bacteriolysins, agglutinins, precipitins and opsonins, and had even gone so far as to put down some modern ideas in connection with Ehrlich's side-chain theory, when he came to the conclusion that a discussion of this kind would be of interest only from a purely academic point of view and, therefore, he decided to leave this theoretical aspect of the subject, and

merely to explain quite briefly how these various preparations differed.

A serum was a substance developed in the body of an immunised animal, and could be produced by injecting toxins or failing that, the micro-organisms themselves. When an extracellular toxin was available, such as is the case in the production of either antidiphtheria serum or antitetanus serum, then the resulting product was an antitoxin. When, on the other hand, the organism did not elaborate any appreciable quantity of exotoxin, and it was necessary to immunise the animal with the micro-organism, then the resulting product was spoken of as an anti-microbial or anti-bactericidal serum; an example of the latter was seen in antistreptococcus serum.

Vaccines differed from serums in that they were not developed in the body of an immunised animal, but consisted of suspensions of killed micro-organisms in normal saline solution. The lecturer said he did not altogether like the word "bacterin," and was not at all certain that the term was favourably received by veterinary surgeons in this country, but in America the word "bacterin" was confined solely to this class of product, a true vaccine differing from a bacterin in that it was really an attenuated culture of micro-organisms; in other words, the organism was viable rather than dead. An excellent example of such a true vaccine was seen in Blacklegoids. Dr. White explained that immunity was really of two kinds, natural and artificial, and it was with the object of trying to establish an artificial immunity that vaccines, serums, and similar products came to be used in medicine.

The preparation of antitetanus serum, anti-streptococcus serum, and anti-white-scour serum was referred to in detail. Speaking of antitetanus serum the lecturer observed that it was a little surprising that this product was not more frequently administered intravenously. In America it was often given by this route, and, according to some authorities in that country, the results were extremely good. The dose suggested was from 75 to 150 c.c. (8,000 to 16,000 units) according to the size of the horse, and if marked improvement was not evident in five days the dose was repeated. He was informed by a competent veterinary surgeon in this country that, no matter how severe the case may be, the animal should always receive antitetanus serum. According to this particular worker if the horse was on the ground it was absolutely essential to get him on his legs; he could then be given 6 grains of morphia and ¼ grain of atropine, raised, and placed into slings. This procedure should be followed immediately by the administration of 30 c.c. of antitetanus serum every four hours until the animal has had 120c.c. According to this informant, it was of little use injecting serum while the horse was on the ground owing to the rigidity of the animal's muscles.

Immunisation against blackleg was referred to at some length. In the manufacture of Blacklegoids young healthy cattle, weighing about 350 pounds, were selected from stock where black quarter is practically unknown. These animals are kept in quarantine for about two weeks, during which time they are tested to exclude tuberculosis. At the end of the quarantine period the animals are injected deeply into the muscle of the right quarter with a killing dose of the blackleg organism, which is maintained in pure culture in a suitable medium and checked frequently for identity and purity. Twenty-four hours after the death of the animal, the typically-blackened, more or less dry and spongy tissue is removed from the semi-membranosus muscle to sterile containers and sent immediately to the laboratory for further treatment. A sample of the blackleg muscle tissue is tested out on suitable media to differentiate the organisms present from the *B. welchii*, *B. oedematis maligni* and other possible contaminating organisms. The muscle tissue is then reduced to powder, and subjected to a process whereby the organisms are attenuated under uniform conditions in apparatus designed and used exclusively for the purpose. It is then tested on culture media to establish the identity of the organisms and to determine the relative number of viable attenuated spores per blacklegoid, as well as on guinea-pigs. Samples of each finished batch are further tested on calves in order to establish the safety of the product when injected into susceptible animals. Dr. White reminded the audience that one of the speakers at the recent Veterinary Conference in Aberdeen stated that, in this country, blackleg in cattle was almost always due to the *B. chauvoei*, whereas in sheep the *Vibrion septique* was more generally the organism involved. A brief reference was also made to the possibilities of Blackleg Aggressin and Blackleg Filtrate.

Speaking of antistreptococcus serum as a prophylactic agent in cases of pyæmic arthritis, Dr. White referred to the work of Mr. Peggie and the fact that this veterinary surgeon claimed to have had a very high percentage of success. The method suggested was to give a half-ounce of serum about the tenth day before foaling, and the same quantity about the third day before the foal's birth. The foal should receive a quarter-ounce of sérum from twenty-four to forty-eight hours after birth, as it is considered rational to treat the foal as soon as possible. In his opinion even better results might follow an active immunisation with a streptococcus vaccine (bacterin) in the earlier stage of pregnancy, as by this means it ought to be possible to establish an active immunity whereas, of course, antistreptococcus serum conferred only a passive immunity.

Dr. White said that there had been one or two cases recorded recently in veterinary literature relating to the value of Hæmostatic Serum (Hemoplastin) in the control of hæmorrhage. This biological product was really a combination of the blood-clotting ferments, thrombokinase and prothrombin, together with a third substance which, for want of a better name, was termed anti-antithrombin, the latter being included to neutralise antithrombin, which normally

kept blood fluid. He did not know whether true hæmophilia existed in lower animals, but in the human subject it was almost entirely confined to the male, the condition being a hereditary one, and handed down through the female to the male. In cases of hæmorrhage of this type it was generally believed that the blood was deficient in either thrombokinase or prothrombin, or possibly both, and Hæmostatic Serum was of the greatest value. It had also been used in the treatment of purpura hæmorrhagica in a horse, and it was a little surprising that a dose of 2 c.c. should control the hæmorrhage in such a large animal. In these cases the results would probably be more satisfactory if the preparation had been administered intravenously.

After referring to such veterinary diagnostic agents as mallein and tuberculin, Dr. White went on to mention the use of vitamins and their possibilities in veterinary practice. Some of the photographs exhibited were of striking interest, and the lecturer suggested that the vitamins might have a bearing on the endocrine glands, illustrating this point by showing some details of a post-mortem examination of pigeons and rats deprived of the water-soluble B. In each case all the organs are atrophied except the suprarenals and pituitary, the former enormously hypertrophied under such conditions, and it has been demonstrated that the output of adrenalin is three times as much as when the water-soluble B vitamin is added to the diet. It was difficult to say exactly what the relationship was although, according to Langdon Brown, vitamins ought to be regarded as hormones of the vegetable kingdom.

The lecturer went on to refer to gland products, particularly adrenalin, pituitrin and parathyroid. He pointed out the importance of the so-called hormone balance and explained how, according to some endocrinologists, the thyroid, anterior pituitary, and suprarenal were katabolic in character, and co-operated with the sympathetic nervous sytem, whereas the parathyroid and possibly the pancreas were anabolic in character and co-operated with the parasympathetic nervous sytem.

Speaking of the parathyroid gland, the lecturer expressed his opinion that it offered great possibiljties in veterinary medicine because of its ability to control the calcium metabolism. Parathyroid also appeared to act as a detoxicating agent. In other words, its function was to neutralise the poisonous purine derivative, guanidine, which otherwise tended to collect in the muscles. It was recognised that if a dog was parathyroidectomised the animal developed tetany, and it was a matter of interest that the calcium content of the blood dropped about 50 per cent. Owing to the control which it seemed to exert on the nervous mechanism, it had been suggested for use in the treatment of chorea; unfortunately, however, the results did not appear to have been particularly striking.

Dr. White gave his experience with parathyroid in the treatment of some dogs suffering from osteo-malacia, with some evidence of rickets. The bones of these animals were extremely soft and, in some instances, were of cartilage-like consistence. No less than forty out of a kennel of eighty were suffering from this condition, and it was interesting to note that there had been a lot of in-breeding for some years. Up to the time he was asked to see these animals nothing had been done, and when the condition had developed too far they were just killed off. Parathyroid was suggested, one-tenth grain once a day being the dose. In one or two instances a combined vitamin product by the name of Metagen was given, in addition twice daily with the meals. In three months all the animals appeared to have made a complete recovery.

Dr. White referred to the effect of the anterior pituitary on growth, and demonstrated his remarks with some slides showing the effect of partially removing the anterior pituitary, and also the effect of administering an extract of anterior pituitary to tadpoles. Pituitrin, on the other hand, was an extract of the posterior lobe, and its value in obstetrical practice, particulary in smaller animals, was well known. In human medicine pituitrin was probably the most reliable cardiac stimulant available to-day, but he did not know that this fact was appreciated as it ought to be in veterinary circles.

The lecture was illustrated by a large number of excellent lantern slides and, at the conclusion, Dr. White exhibited, for the first time in this country, a cinematograph film showing the production of anti-toxin and its standardisation on guinea-pigs. A particularly interesting part of the film demonstrated the method used in the standardisation of Adrenalin. It was explained that, for this purpose, a dog was anæsthetised with chloretone in oil, and then the animal received a standard dose of Adrenalin intravenously—generally 1/6,500 grain. This immediately produced a constriction of the arterioles, and the rise in blood pressure was recorded on a kymograph. The effect passed off in a moment or two, when the animal received a similar dose of the sample under examination, and the effect on the blood pressure was compared with the standard. The record and tracing were clearly seen on the film.

Discussion.

The showing of the film, which was viewed with the very greatest interest, reduced to a few minutes the time available for the discussion of Dr. White's informative lecture.

The President, after expressing the meeting's gratitude to the lecturer, called upon Mr. Scott, of Bridgwater, to open.

Mr. Scott: I am allowed five minutes, so I must be very brief. I know I am voicing the feeling of the meeting when I say that we are deeply indebted to Dr. White for coming here this afternoon and giving us such a very interesting and informative address. Even words of wisdom are sometimes very easily forgotten, but when they are impressed upon the mind by an ocular demonstration such as we have

had this afternoon, I think we shall all carry away with us very permanent and happy recollections.

Dr. White strikes me as being ultra cautious in everything he has said, and he has been so thoroughly orthodox that I am left with very little to offer criticism upon. I dislike, however, the American word "bacterin," I think we can afford to eliminate that term from our vocabulary and confine ourselves to "sera" and "vaccines," thereby tending to simplification. Even with these some practitioners write to me for a serum when a vaccine is what they really want. I am glad the lecturer has mentioned joint evil, and he appears to place great reliance upon the injection of serum into the pregnant mare ten days before foaling. I believe in a pre-natal as well as a post-natal infection phase, and, if he will allow me to say so, I cannot conceive how, say, 30 c.c.s anti-streptococcal serum with a given standard of antibody capacity could exercise a definite immunity a few days prior to birth, upon a fœtus after dilution with many thousand c.c. of the *maternal* serum. In these cases I now prefer to *actively* immunize the pregnant mare, beginning at the sixth or seventh month, so that she may elaborate her own antibodies and pass them on to the fœtus, thereby effecting a high degree of immunity. As a routine measure I do not now inject serum into the mare, but where one is dealing with valuable progeny, in addition to vaccinating the mother, I advise that the foal should be injected with an anti-streptococcal, staphylococcal and *B. coli* sera. With regard to white scour in calves, I here apply the same principle of injecting a *B. coli* antigen into the pregnant cow, thereby obtaining valuable prophylactic results. Where an outbreak occurs in a number of calves I believe the *B. coli* serum is a valuable prophylactic and curative agent. Distemper is certainly our *bête noir*, and I gather that Dr. White inclines to the view that Ferry's bacillus is the *causa causans*. Personally, I opine we have here as a *prima facie* cause an ultra-microscopic virus, and I would go so far as to say that I look upon *true* uncomplicated distemper as a benign disease, and if our patients could only talk and tell us when they have the first rigor, and we could place them under perfect hygienic conditions, we should then get distemper running such a mild course that it would be comparable to a child with a mild type of measles. I believe, therefore, that the severe phases of distemper with which we have to deal are dependent upon secondary organisms. I think we must look upon the *Bacillus bronchosepticus* as the primary pulmonary factor, that the *Bac. coli* group are responsible for the alimentary form, and that the streptococcal types aid and abet in the pathogenic process. If we could only protect our patients with an antidote against the initial virus, distemper would be robbed of its sting. Failing this, we must continue to fall back upon prophylactic and curative measures directed against the agents of secondary infection, and in this we are quite justified in using sera and vaccines. I confess surprise when Dr. White prefers *stock* to *autogenous* vaccines. Personally, I consider the autovaccine, provided the technique is correct, is the scientific embodiment of what an antigen should be, whereas a stock vaccine must ever be a speculative *quantum*. I was greatly interested in Dr. White's learned remarks regarding the glandular products. Among other points, he mentions the specific action parathyroid has on the calcium content of the blood. Is it not a fact that the thymus functions also in that direction? I look upon the blood calcium content as a very valuable factor in bacterial infections, especially those of the chronic type. Speaking generally, when we are dealing with streptococcal and staphylococcal infections we have primarily a lowered calcium content, and I believe that by the administration of such agents as iodine, arsenic, and iron, we activate the endocrene glands, thereby raising the calcium content and producing an economic and effective type of immunity. One is only in the initial stage of those glandular therapics, and the more one goes into them the more mystified one becomes. In a general way, we must not confine our attention to one particular gland; the internal secretions work one with another, and where there is partial failure of the one, there may be a compensatory increase in another. I believe those glands are actively involved in the production of immunization, and a disturbance of their balance is possibly responsible for some of the specific infections.

Mr. WATSON: I should just like to mention the use of parathyroid in the case of a spaniel bitch with what I took to be locomotor ataxy, following upon heat stroke. Previous to its use I had tried her with various drugs without any effect. I gave her 60 tablets of the parathyroid and at the end of that time she was completely restored to health; it had a very beneficial effect.

Mr. ADAMS: I wish to withdraw the statement made earlier in the afternoon, and which will have created a false impression if it is allowed to stand, that I thought practical demonstrations at the quarterly meetings were the best things upon which we could spend our money. I withdraw that now, having listened to Dr. White's demonstration. (Hear, hear).

Mr. COLEMAN: I, like the others, am not going to attempt to discuss the lecture, but I want to thank Dr. White most sincerely for his very eloquent address. I wish to gain more information about follicular mange—I did not quite catch what Dr. White said he used; also, in what way it is supposed to act.

A MEMBER: I should like to relate my experiences of the use of "distemper bacterin." I have tried it on sixty dogs, in some cases as a curative, but mainly as a prophylactic. As a curative agent I have not used it often, but in those few it seems to have rather aggravated than lessened the symptoms. I have employed it as a prophylactic on about forty dogs, generally under six months' old, but I have used it in dogs under two week's old. As a result I am not yet convinced that Parke, Davis have produced a prophylactic for distemper that can be absolutely relied upon. In the first place, I inoculated two litters of seven puppies—Labrador retrievers. They were done at five and six weeks' old respectively.

They were injected with 1c.c. and then ½c.c. in addition and then with 2.5 c.c. as a final dose. During the period of inoculation the puppies came into contact with a small spaniel that had had distemper, and more of these contracted the disease. Another Labrador retriever bitch whelped down and the puppies were inoculated, but in five instances distemper was contracted. In another instance, three of five Cocker Spaniel puppies contracted the disease. My experience of distemper bacterin is not, therefore, a very happy one.

Mr. POWELL: I wish to relate two other extraordinary cases of tetanus. Last Saturday week I was called to a case in which a mare, five years of age, had developed acute tetanus. I told the owner that, in my opinion, the animal was too far gone for any treatment to be much use, and the mare died in twenty-four hours. The next morning the man came in and reported he had another mare with tetanus. She had been in company with the previous case, and had it almost as severely as the other. I told the owner that in this case something must be done, and we would make an endeavour to save the mare, and I injected, as an initial dose, 15,000 units Parke Davis antitetanic serum. Within three days this mare could feed quite well, turning her head and looking at you as you entered the stall. I increased the dose on two consecutive days, by an additional 5,000 units, and subsequently, until she had altogether 40,000 units. The mare is now practically well and can walk up and down the stall. This may be of some use to practitioners who wish to know what the initial dose should be—15,000 was started with and increased by 5,000 units each time. In neither case was any wound discoverable.

Mr. REES: I have, amongst the collieries in my charge, two which are practically connected, and in one I have had, for a long period of years, numerous cases of tetanus, but in the other I have never had a case. I have used antitetanic serum as a prophylactic with success; as to the curative effect I have my doubts. When you have a case of developing tetanus, the toxin establishes itself in the nervous tissues; the serum neutralises the toxin in the blood, but I am not sure that once toxin is fixed in the nervous tissues the serum has any neutralising effect.

Mr. SLOCOCK: I may be permitted to say that I have used the distemper bacterin with good results in several cases. I consider it, as a prophylactic, most unreliable, and that, as a curative agent, its value is nil, but in those cases where you can give it as a prophylactic and expose your puppy at once to distemper infection, there I believe you will get an immunity. That is simply brought about by allowing the dog with the serum in it to contract distemper at once, in the same way that we always find the serum beneficial in swine fever. I have had several cases in which I have taken the puppy which I was to render immune and had it in the same cage with a dog with distemper and let it eat the left food from the sick animal, and in none of these cases have I known the dog take distemper.

Mr. AVESTON: After operating upon a dog for an injury to the hard palate, the bleeding lasted for four days. I got into communication with Parke, Davis, and they suggested calcium lactate. I used this and the animal not only recovered, but, although he has had several wounds since, has not again revealed that bleeding tendency. He had treatment weekly for eight weeks.

THE REPLY.

Dr. WHITE, replying, said: Recollections of my previous visits to various Veterinary Medical Associations have always been very pleasant in connection with "question time," and I have been told that I shine more as a "question time" man than as a lecturer; hence my disappointment at the inevitable curtailment of the discussion here to-day.

I want to thank Mr. Scott very much indeed for his very kind remarks. It was nice of him to say I was "orthodox," but I purposely steered clear of any point that might lead us into lengthy discussion. In a way I agree with him in regard to his objection to the term "bacterin," but it is the best that has yet been devised to distinguish between a suspension of killed organisms and a collection of living organisms.

I was interested in what Mr. Scott had to say in regard to antistreptococcus serum and pyæmic arthritis. There are two schools of thought—those who say that infection is pre-natal and those who hold it to be post-natal. I would like, if I may, to put some of my views in the form of a letter to him, as time does not permit me to go into the matter now.

I was also interested in his remarks concerning white scour, and I wonder whether it is possible to establish an active immunity so rapidly as Mr. Scott would lead us to believe.

[Mr. Scott's reference was, however, to a passive immunity.—Ed.].

I have regarded it as an acute condition and that, therefore, we want to give anti-bodies to the patient rather than call upon him to manufacture his own anti-bodies.

I am well aware that distemper is the *bête-noir* of many members of the Veterinary Profession, and I prefer to await the evidence which I happen to know is forthcoming with regard to *B. bronchisepticus* as the primary etiological factor. My own opinion is that if canine distemper is not caused by that, then it is probably caused by a type of micro-organism which they have recently succeeded in isolating at the Rockfeller Institute in connection with human influenza. There Olitsky and Gates have isolated a very minute micro-organism which is not strictly ultra-microscopic and which occurs in association with other diseases. It looks as though they had succeeded in isolating the cause of influenza. I agree with Mr. Scott when he says that other organisms, such as streptococci, staphylococci and *B. coli* are involved.

With regard to glandular products, it is gratifying to me that the subject of glandular therapy is receiving so much attention from the Veterinary Profession.

Hitherto one has rather thought outside the Veterinary Profession in connection with endocrine products, but, as a result of what has been said this afternoon, I shall have to revise my ideas. Mr. Scott referred to the question of calcium metabolism. It is an interesting fact that the administration of calcium lactate does not tend to increase the calcium content of the blood. The function of the parathyroid seems to be to ultilise the calcium which is present.

Mr. Scott made reference to the hormones of the glands, but I would point out that there are antagonistic glands. His theory as to the drawing of the calcium content by the administration of metallic preparations to increase glandular activity is very interesting, because it suggests that parathyroid has been given to counteract abnormal thyroid secretion. It was very interesting to hear what Mr. Watson had to say—the effect of parathyroid on the nervous mechanism is apparently quite definite; conditions of tetany do respond to the administration of parathyroid.

With regard to the use of streptococcus and staphylococcus vaccine of canine origin in the treatment of follicular mange—a point raised by Mr. Coleman. Presumably mange, as a primary infection, is parasitic and the usual parasiticides would help. But you soon have a bacterial infection imposed on the parasitic, and it is when dealing with such a condition that the use of the combined vaccine is indicated.

Several references have been made to Canine Distemper Bacterin; in an acute condition of canine distemper, I should never use Canine Distemper Bacterin, but serum. The opsonic index is low and in those conditions rather than calling upon the patient to make his own anti-bodies, I would prefer to give the serum. One reason why the use of Canine Distemper mixed Bacterin as a curative agent has made the animal worse is that you have produced an acute negative phase, and the patient has not been able to respond. I must thank Mr. Powell for giving his experience with antitetanic serum. I can never meet with a veterinary surgeon in this country who has ever given antitetanic serum intravenously; in doses up to 18,000 units it is usually given so in America.

Reference has been made to the use of serum in swine fever. I have not yet satisfied myself that so-called hog cholera serum is of much value as a curative agent.

I did not know that hæmophilia existed in the dog. In the human subject it is an hereditary condition, handed down through the female. There is no such thing as a true female human hæmophiliac.

A hearty vote of thanks was accorded Dr. White for his lecture, the PRESIDENT remarking that he considered it a splendid send-off upon his year of office. He hoped succeeding meetings would maintain the high standard set that afternoon.

ANNUAL DINNER.

The company adjourned, after a brief interval, to a dining hall at the hotel, where a tastefully-served repast was enjoyed. The early departure of the London guests interfered somewhat with the Toast List. The Loyal Toasts having been enthusiastically honoured,

Dr. SAVAGE submitted "The Royal College of Veterinary Surgeons." In doing so, Dr. Savage, who was warmly received, after returning thanks for the honour, said he knew that the Veterinary Profession were very proud of their College and for a very good reason. They had a great advantage over those of them in the Medical Profession in that they possessed a one-portal system. That, of course, materially enhanced the power and the value of the College. (Cheers). The Medical Profession had a system whereby a would-be medical man could take his choice—he might be a good man and a hard worker or he might take it easy and choose the lower and less onerous road. He understood that they realised the draw-backs of such a system. He was especially glad to be there that night to emphasise, as a medical man, his own strong personal feelings of the importance of cordial co-operation between the Veterinary and the Medical Professions. (Cheers). He knew that that afternoon he had learned a very great deal—he was always glad to get another point of view. In the past there had been a sad lack of co-operation between them as students, they had hardly realised that there was such a thing as the veterinary side of pathology. At the present time that feeling was certainly disappearing and they were all glad to have the evidence of a realisation of that fact furnished by the formation of the comparative section of the Royal Society of Medicine. He felt himself, personally, particularly interested in it, because most of the research upon which he had ever engaged had touched the border line between human and veterinary medicine. He would like to mention one name which had been forgotten in that connection in that of William Power. He remembered suggesting some researches that he proposed to make twenty years ago—one was on food poisoning bacilli, and another was on how far mastitis in cows was a menace as regarded milk—Power got exceedingly enthusiastic upon those subjects. He thought they would do a great deal by co-operation one with another. He knew that they, on the medical side, had a great deal to learn. There was one little thing he wished the Veterinary Profession would avoid and that was their horrible habit of taking the human disease names and labelling the diseases of animals with them—for example "fowl-cholera," "fowl-diphtheria."

Mr. SCOTT: "Chicken-pox." (Laughter).

Dr. SAVAGE: It did lead to a great deal of confusion, and he thought that it was something in which they should co-operate. He was sure their resources of Greek and Latin were sufficiently large to enable both professions to manufacture their own names.

He would like to say that it was very necessary for the two professions to co-operate on the milk question. (Hear, hear). They had the Act of 1915, which was supposed to come into force in September of the present year. That Act had already been in

cold storage for ten years, and he did feel that unless they exerted a good deal of pressure on the medical side and on the veterinary side, that period of refrigeration was likely to be considerably prolonged. He thought the professions should unite to point out how necessary it was that some legal provision should be made for the supervision of the milk supply.

Mr. S. H. Slocock: The President of the R.C.V.S. replying to the toast, expressed his gratification at the cordiality of the terms in which Dr. Savage had proposed it. It was very pleasant to come amongst them representing their Council and to see them give such a reception to that toast. The Council was a body of the servants of the profession; the President was the servant of the Council, so that he counted himself a very small item. Time would not allow him, even had he the power, to reply to the toast in the manner merited by the thoughtful address of the proposer. It was very kind of them to invite him and he had enjoyed himself immensely. (Cheers). Dr. Savage appeared to know a great deal about their profession—he started by saying they had the one-portal system. They had never heard of a man in the profession who wanted to make an alteration in that—any man, inside or outside the Council, who ventured to suggest doing away with that, would be looked upon as a man who was not loyal to his profession. (Hear, hear). Dr. Savage had touched upon another point that was very dear to them—the close association of the two professions. Time was, in the infancy of their profession, when the Medical Profession acted towards them as an elder sister—they were taught, in their early days, by the sister profession. But in later years the Veterinary Profession had grown and now they appeared more of an age; they worked together, they were associated together in the big undertakings which they saw going ahead in this country. It was a source of very great satisfaction to their profession, to the Medical Profession, and to all deep thinkers to see the number of research institutes creeping up in this country. The profession could not go on without its research institutes, it could not go on without its teachers and it could not go on without its general practitioners. (Hear, hear). They combined to make a profession, which he honestly believed was a great asset to the country, and not only to the livestock of the country, but to the general welfare of mankind. By that combination of those three forces their profession would be enabled to achieve and to maintain a big position amongst the professions of the world. (Cheers.)

The toast of "The Sister Profession" was given by Mr. W. Scott, Dr. Walker Hall and Dr. Colston Williams replying, while that of the "Mid-West and South Wales Veterinary Association" was submitted by Mr. G. H. Twisey and responded to by the President, Mr. A. E. Roberts.

J. J. Aveston,
Hon. Secretary.

The Veterinary Medical Association of Ireland.

Meetings at Dublin.

(*Continued from Page* 113).

Mr. Magee, continuing his account of clinical experiences, said:

With regard to formalin, he asked the members if they had any experience with regard to the use of formalin for any of the forms of mastitis in the cow. His experience was that it was sometimes good and sometimes of not much effect. He would like to hear from people who had used formalin what their experience had been. Mr. Magee then referred to another case in which he and Professor O'Connor had taken part. He looked upon it as a most interesting case. The subject was a bay hunter—a beautiful horse—which the owner had intended to enter for a five-year-old class in the present Show. Last hunting season he coughed a little, and sometimes a little discharge came from one or both of the nostrils. On account of the coughing, hunting was discontinued and the horse given slight walking exercise. Sometimes in walking the horse discharged from one nostril and sometimes from both. The animal continued to go on like that during the whole hunting season. The owner, as spring approached, did not get any veterinary advice. He then decided to prepare him for the Show. The groom regularly exercised him—at times during exercise the discharge would make its appearance, while on other occasions it would not appear until afterwards, and then from one or both of the nostrils. The owner then consulted the speaker. The groom galloped the horse. He went alright but coughed a little. The horse was then walked back to the stable—a distance of about half a mile, and in five minutes down flowed a white mucous discharge from the near nostril, and after a few minutes more a similar discharge came from the off nostril. There was practically no smell from it, but the groom informed him that sometimes a smell was noticeable. It appeared to him that there was some trouble in the sinuses. On a subsequent visit he injected cocaine over the sinus on the off side and opened into that with a gimlet. There was nothing in it. The horse was breathing through the holes he had made. He told the owner it was unsatisfactory. He subsequently opened the sinus on the other side with a similar result. He then thought the trouble might originate from the guttural pouch, for there appeared to be some swelling over the guttural pouch on the near side. After some further examination he decided the only thing to do was to open into the guttural pouch. However, before doing this he told the owner he would like to have a consultation, as the horse was a valuable one. He therefore suggested Professor O'Connor, who came down. They both decided there was nothing else for it but to open the guttural pouch, which Professor O'Connor did. They found absolutely nothing. The mystery as to where the discharge was coming from remained unsolved.

He had never met such a case before, and possibly some member of the profession would be able to

throw some light upon what Professor O'Connor and himself regarded as a most mysterious affair.

The PRESIDENT, having expressed the gratitude of the Association to Mr. Magee for having brought forward these interesting cases, invited discussion thereon.

Messrs. MAHONY, MULCAHY, HEALY and HOWARD thanked Mr. Magee and complimented him upon his courage in bringing forward examples showing where he had failed, so that the profession as a body would benefit from his experience in endeavouring to find out some means of avoiding similar troubles.

Professor O'CONNOR paid a special tribute to him for his instructive description of the cases submitted. In the case of the bullock, Mr. Magee had just made the mistake of going about ⅛in. too near the middle line, when he was trephining. With regard to Mr. Magee's inquiry as to a text book describing trephining in cattle, he believed the operation was described in Moussu's work. His guides for the operation were to draw a line joining the middle parts of the roots of the supra-orbital processes, bisect it by a vertical line, and operate in the superior angle caused by the intersecting lines.

Mr. KELLY said he had adopted the method from Professor O'CONNOR in his lectures and found it successful.

Messrs. DONOVAN, COSGRAVE, MCDONNELL, DOLAN, O'DEA, HOWARD and DOYLE also contributed observations.

Messrs. Hickey (Wexford), Hynes (Lismore), Power (Clonmel), and O'Leary (Kerry) were elected to membership.

The meeting terminated with a vote of thanks to the Chairman.

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A meeting of this Association was held in the Royal Veterinary College, Ballsbridge, on the 27th November, 1924. The President, Mr. M. J. Doyle, occupied the chair, and the following also attended :—Messrs. Kelly, Maloney, Craig, O'Connor, Kehoe, Browne, Dunne, Purdy, Dodd, Cosgrave, Sheil, W. T. Browne, Hobson, Murphy, Nolan, O'Dea, Crogan, O'Reilly, J. A. Kelly, Mellany, Power, J. Barry, Howard, Emerson and Mernagh.

Letters of apology for non-attendance were read from Messrs. McSweeney (Cork), Mulcahy (Clonmel), McClusky (Tirconnell), and J. V. Carroll (Ballina).

A letter was read from the Defence Department with regard to the request for the reception of a deputation to discuss the question of the status and pay of veterinary surgeons serving with the forces. The Association was asked to communicate with the Army Finance Officer, College of Science, Upper Merrion Street, to whom previous correspondence relating to the question had been transmitted.

In reply to Professor O'Connor's letter regarding the impropriety of a member of the profession presenting himself for the appointment of Sub-sanitary Officer in Cork, the said member wrote stating that he applied for the appointment believing that it was for Meat Inspector, and was not aware that the other position was associated with it. It appeared that the Cork Council had appointed a layman to the dual position of Meat Inspector and Sanitary Officer at £5 per week. Professor O'Connor reported that he had since communicated with the Town Clerk of Cork as to the advisability of appointing a qualified veterinary surgeon to the position of Meat Inspector, and had received a reply that the matter would be given attention.

The report of the deputation to the Cork County Council, relating to the dismissal of Mr. J. J. Healy from the position of Veterinary Inspector to the Macroom Union, was read and adopted.

Mr. G. T.-O'Reilly, 49 Lindsay Road, Glasnevin, and Mr. Denis Brophy, Clonakilty, were unanimously elected members of the Association.

Mr. JOHN A. KELLY, of Clare, called attention to the fact that although the Clare County Council had thrice unanimously elected him to the position of Veterinary Surgeon for the County, the Department had declined to sanction his appointment. He urged the Association to take up his case, and it was decided that the question be referred to the Council of the Association before any definite action is taken.

The PRESIDENT then read the following paper on the Veterinary Services in the Free State

VETERINARY SERVICES IN THE FREE STATE.

As the members of this Association are aware, the usual Presidential Address was omitted at the inaugural meeting this year, owing to the transitional state of affairs in connection with certain important interests of our professsion in Southern Ireland.

The importance of the Veterinary Profession in the economic life of the State cannot be exaggerated when it is remembered that its duties include the preservation of the chief asset of the nation, viz., its livestock.

Figures will be given at the close of this address which will show the enormous actual and relative importance of the livestock industry as an item in the invested capital of the people of the Free State. It must also be remembered that the health of the community is inextricably mixed up with that of the domestic animals. So that the veterinarian is also concerned with the service of public health.

The duties which should properly be assigned to the Veterinary Profession may for convenience be divided under several heads :

1. The prevention, detection and eradication of contagious diseases.
2. Ordinary clinical practice.
3. The education of stock-owners and the general public in the principles of hygiene as affecting the lower animals.
4. Securing a healthy meat and milk supply.

The above points will be considered *seriatim*, but it will be well here to mention that in the Free State there are at present only two hundred and fifty qualified members of the Royal College of Veterinary Surgeons, of whom the Counties of Cork and Dublin absorb one-third, leaving about one hundred and

seventy practitioners to carry out the duties enumerated above throughout twenty-four Counties.

Hitherto, the duties which come under the heading No. 1, above, have been performed in part by members of the Central Staff who are whole-time officers with fixed salaries and allowances, and in part by practitioners living in the provincial parts of the country, who, in return for a modest remuneration, carry out the every-day routine of inspection and other duties under the Contagious Diseases (Animals) Acts and various Orders of competent bodies, in some cases also carrying out the duties of inspection under the Orders relating to Dairies and Cowsheds and Tuberculosis. These local appointments gave a guaranteed income, however small, which in many cases was the only inducement which caused a veterinary practitioner to attempt to earn a subsistence in a remote country town.

It is now suggested that the services of these local practitioners be dispensed with, practically without notice and without one penny of compensation, no matter how many years' service has been given, and that whole-time officers be appointed at a small salary, one for each county, dealing with contagious diseases.

With regard to No. 1, the profession can point with considerable pride to the achievements of the whole-time officers of the Veterinary Staff employed by the Central Authority in keeping Ireland free from foot-and-mouth disease and other scourges which have ravaged other lands, but it is certain that the members of that Staff would be the first to acknowledge the value of the services rendered by their rural confrères. It may be said that the County practitioners have acted as the " eyes and ears " of the Central Department.

No. 2, *i.e.* ordinary clinical practice, is at least of equal importance, though its work does not offer the same spectacular appointments as does No. 1, and is too often ill-requited in a pecuniary sense, owing to the peculiar economic conditions under which the agricultural community live in this country.

No. 3. Clinical practice as well as education of the public in those principles of hygiene which are so essential in the interests of public health, is largely in the hands of the general practitioners who have hitherto been able to exist in remote districts only by means of the addition to their income afforded by part-time appointments. The importance of No. 4, which relates to securing a healthy meat and milk supply, cannot be exaggerated, and it is now absolutely necessary that the position of the veterinarian in this connection should be clearly demonstrated.

It is not putting the matter too strongly to assert that the inspection of meat, milk, cows, cowsheds and slaughterhouses, can only be efficiently performed by highly-trained specialists with practical every-day experience, and that these qualifications are to be found only among fully-qualified members of the Veterinary Profession.

It is safe to say that owing to a dearth of veterinary practitioners where they are most required, the safety of Ireland's livestock is grievously imperilled. Thus, on examining the map of Ireland in conjunction with the current register of veterinary surgeons, we find very large areas in which veterinary advice and assistance are practically unobtainable.

A glaring instance is to be found in one area of Western Ireland. If an imaginary line be drawn eastward from Miltown-Malbay, on the coast of Clare, through Ennis to Nenagh and thence north through Birr and Ballinasloe to Roscommon and thence west through Claremorris to Westport on the coast of Mayo, it will be found that an area of over two thousand square miles will be enclosed between our imaginary line and the sea, and in that area there is only one resident veterinary practitioner; stockowners being dependent upon the subsidised services of the practitioners who practise around the borders of the area. In County Galway it is said that there are only two resident veterinary practitioners, and in all Connemara not one. If the subsidies, the withdrawal of which is now threatened, are taken away from the practitioners in such places as Ennis, Nenagh, Ballinasloe, Athenry, Claremorris and Westport, nearly three thousand square miles of country will be left dependent on a veterinary service rapidly becoming more inadequate.

It will be apparent, therefore, that any changes in the status and emoluments of the Veterinary Profession should be made only after very careful consideration.

In the past, some well-meaning efforts have been made, but, as appears to be threatened at present, such changes were not made in accordance with the advice and according to the experience of the Veterinary Profession, and so the measure of success has been disappointing. As an instance may be mentioned the Veterinary Dispensaries, which might have been made an institution of the greatest utility to the community and benefit to the profession, but having fallen under the control of unsympathetic (if not hostile) influences, have been allowed to dwindle nearly to vanishing point, their supervision being in the hands of laymen and their conditions of service impracticable.

The veterinary officers employed by local authorities to administer the several Acts and Orders in connection with Contagious Diseases in Animals, have in the past done invaluable work for the country, yet, in many cases, have only been enabled to live in the poorer rural parts of Ireland by the remuneration hitherto paid for their services as part-time officers of County Councils and other bodies. This subsidy (in too many cases inadequate) it is proposed to withdraw, and, as must be obvious from what has already been pointed out, the result can only be that throughout vast areas of Ireland stockowners will be without the advice and assistance of the Veterinary Profession. The number of practitioners is already too small for the needs of the country, but will certainly be still further reduced if a repressive policy is pursued towards the Veterinary Profession.

Let it be repeated—there are in the Saorstat only 250 qualified veterinary practitioners. The facilities for obtaining veterinary assistance by stockowners are scandalously inadequate in many places, so that

the treatment of domestic animals is too often left in the hands of "quacks" and other ignorant persons.

Thus it may be remembered that the outbreak of foot-and-mouth disease in 1913 occurred in a herd which had been treated by a local "quack" for "timber tongue," and it is well known that acts of shocking cruelty are perpetrated upon animals, ostensibly for therapeutic purposes, by unqualified persons whose ignorance is their only excuse.

It must not be forgotten that the spread of elementary knowledge of the laws which govern the health of animals and man, is one of the results of the intercourse of stockowners with men possessed of the specialised scientific knowledge which is part of the equipment of the veterinary practitioner. That the general health of the community is largely dependent upon that of the domestic animals is universally recognised, so that none can dispute the desirability of a well-equipped veterinary force to take its proper place in the contest for the preservation of public health.

Another matter which is well worthy of a passing reference is that of research. Here, again, an anomalous position would appear to be in danger of arising, as a very large sum has recently been expended in the Free State for the erection and equipment of a Veterinary Research Laboratory, but its work must be greatly handicapped if it is not supported by a number of qualified inquirers throughout the country, and in the absence of such a body of veterinary practitioners the application of the results of research will not reach the class for whose benefit it was intended.

As an instance of the application of the results of research may be instanced the use of tuberculin as a diagnostic agent in the detection of tuberculosis in dairy herds.

This is obviously a matter which cannot be allowed to fall into the hands of laymen, offering as it does unlimited opportunities for fraud; yet it is conceivable that before long the use of this test in dairy herds will be made compulsory, in which case the necessary staff must be procured for the work—possibly at great expense.

If, however, the existing qualified practitioners are enabled to continue their present work by means of a subsidy in places where it is required, there will be available, at least, a nucleus of the necessary staff.

Again, the disease "contagious abortion" in cattle, which is at present the subject of research and experiment in every civilised country, calls for the active co-operation of skilled operators who are in a position to test results of prophylactic and thereapeutic processes in the natural environment, as distinct from the more academic experiments of the laboratory.

In connection with research, it must also be remembered that the confidence of the general public is in many cases essential, and that new methods would not even receive a trial by Irish stockowners if it were not for the implicit trust and confidence which they repose in the well-known local practitioner.

Some idea of the importance of the livestock industry in Ireland will be shewn by a glance at the figures given below, which show the value of the exports from the Free State into Great Britain during the twelve months ending March 31st, 1924.

	Quantity.	Value.
Cattle	743,231	£13,545,477
Sheep and Lambs... ...	436,981	£1,270,697
Swine	376,621	£2,179,290
Horses	23,203	£1,422,243
Poultry	———	£678,741
Pork (cwts.)	310,869	£1,291,133
Bacon (cwts.)	465,865	£2,414,172
Butter (cwts.)	503,743	£3,846,980
Eggs (Great Hundreds) ...	4,358,831	£2,858,990
Wool (Centrals)	122,018	£656,850
Hides (Wet)	83,492	£235,326
	Total	£30,399,909

In addition, there must be considered the capital value of the livestock remaining in Ireland, which includes about one and a half millions of milch cows, besides bulls, calves, store cattle, horses, sheep, swine, and poultry, and it will not be necessary to dwell upon the importance of adequate veterinary services for the Free State, to assist in the protection of an asset of such tremendous importance, the value of which can only be guessed at, but which is certainly over one hundred million pounds.

Summary.

(1) Vast areas in Ireland are without the services of a veterinary practitioner.

(2) The number of such practitioners in the Free State is too small adequately to perform the functions which are essential to the welfare of Ireland's chief asset—her livestock.

(3) The local appointments under the Contagious Diseases (Animals) Acts and certain Orders, have hitherto provided moderate though inadequate remuneration to veterinary practitioners in poor districts, and it is essential that this should be maintained or increased to enable men to practice in such districts.

(4) In making any re-arrangement of duties and emoluments among local veterinary officers, the opinions and wishes of the profession should receive full consideration from the Central Authority.

(5) The inspection of meat, milk, cows, cowsheds and slaughterhouses, can only be efficiently performed by fully qualified veterinarians.

Messrs. Cosgrave, Howard, Kelly (Clare), Professor O'Connor and Professor Craig congratulated the President on his very instructive paper, and it was agreed to ask the press to publish it and also to send a copy to the Minister of Agriculture.

Mr. J. J. Kelly (Dublin) proposed that Senator John Parkinson be elected an associate member of their body. It was many years since Mr. Parkinson had

(Continued at foot of first column next page.)

NOTES AND NEWS.

Diary of Events.

Feb. 19th—Annual Meeting of the Eastern Counties Division at Norwich.
Feb. 24th—Meeting of the North Wales Division at Colwyn Bay.
Mar. 6th—Annual Dinner of the Lancashire Division at Manchester.

Mr. Montgomerie on Fluke Treatment.

"The special meeting of the Rhyl and District Branch of the National Farmers' Union at the Alexandra Hotel, Rhyl, was," says the *Denbigh Free Press*, "rendered of exceptional interest by reason of the visit of Mr. R. F. Montgomerie, B.Sc., M.R.C.V.S., a member of the staff of the agricultural department of Bangor University College, who had been invited to attend and deal with the problem of liver rot in sheep, which is just now worrying farmers up and down the country.

"Mr. Montgomerie dealt at some length with the subject of liver rot or fluke in sheep, and his opinions and advice as to the treatment of the disease led to an animated discussion.

"The lecturer gave the results of his experiments during the past year, and said that while the preparation known as danistol had been reported upon very favourably by authorities, he had not in his use of it had 100 per cent. of successes. In his area there had been considerable clamour for some other form of treatment on the score that danistol was too expensive, and at the beginning of November he commenced experiments with male fern. These showed that exaggerated statements in regard to the use of male fern were unfounded, and that that article could be used very effectively in the treatment of liver rot. He did not say it would affect 100 per cent. of cures, but it was sufficiently efficient to merit quite extensive use. The only blot he had encountered in connection with male fern was the loss of four sheep on one farm as a result of an accidental overdose. He had acquainted the veterinary surgeons of the area with the results of his experiments, and had been assured of their co-operation in the matter of giving his method as full a field as possible. So far he had worked with Welsh mountain sheep only, and for such sheep the treatment worked out at a very reasonable cost. Notwithstanding all he had to say for male fern, he advised farmers to consult their veterinary surgeons and ascettain their opinion about him and his work."

Veterinary Lectures in Co. Fermanagh.

The lecturers of the Ministry of Agriculture have just completed a series of lectures to the Cow-Testing Associations of Co. Fermanagh on the common diseases of farm stock.

Fermanagh has suffered terribly recently from deaths in sheep and young cattle, as the result of the ravages of the liver fluke parasite. Captain J. Gregg, O.B.E., and Mr. R. Creacen, the lecturers, estimate that the loss in the Six Counties last year, as the result of this parasite, has not been less than £1,000,000.

The attendance at the lectures is strong evidence that Fermanagh is alive to the necessity of veterinary research being seriously undertaken by the Government in their interest.

An Improver of British Livestock.

A fund is being organized by Professor J. A. S. Watson, of Edinburgh University, with the object of restoring the grave of Robert Bakewell, the pioneer improver of British livestock, who died in 1795. The grave is in Dishley Church, Leicestershire. It is understood that the amount required for the restoration work is about £150, towards which about £60 has so far been contributed by various breed societies, agricultural societies, and others interested.

Robert Bakewell, who was born at Dishley in 1725, produced a new Leicestershire breed of sheep, which, within little more than fifty years, became internationally famous. His cattle also, which were known as the New Leicestershire Long-horn, attained an almost equally high reputation. Extending his experiments to horses, he produced an extremely useful type for farm work.

Fish Meal for Pigs.

"At last week's meeting of the Widnes Chamber of Commerce," says the *Meat Trades Journal* of January 22nd, "the Secretary read a letter from the Secretary of the Lancashire Council of Meat Traders, asking for the co-operation of the Chamber in their efforts to compel the farmers to desist from fattening pigs on fish meal. This food tainted the pork, and caused the butcher a financial loss as well as a loss of custom. Colonel Sayce gave the farmers' point of view, and said the butchers had their remedy—namely, to refuse to buy off farmers who used fish meal. The matter, which had the sympathetic consideration of the meeting, was, however, declared to be outside its province."

Eradication of Sheep Scab.

Mr. W. Jackson Young, F.R.C.V.S., D.V.S.M., of the Ministry of Agriculture for Scotland, in the course of an address at the Marischal College, Aberdeen, to former and present students of the North of Scotland College of Agriculture, upon the subject of sheep scab, said: that the most important Order was that of 1923, which put the onus on the owner or person in charge of the sheep. The authorities had now to be satisfied that every precaution had been taken, but that was sometimes a difficult matter. He held that every owner of sheep should double-dip them spontaneously. He was confident that sheep scab could be stamped out if every sheep in Great Britain could be gathered and properly dipped three times in one month. That was a bold statement, but he believed it to be true.

Obituary.

A familiar figure to many of us has passed away in the person of Mrs. Aldridge, the housekeeper at No. 10 Red Lion Square, who died on the 4th February, aged 78. She was well-known to all London students of a generation ago, and to members of the Central, Royal Counties and other Societies which held meetings periodically at Red Lion Square. She will be most missed by the members of Council of the Royal College, whom she served faithfully and well for nearly 40 years. She was a very intelligent woman, devoted to her duties, and she worked almost to the very last. An attack of influenza compelled her to keep to her bed, and she gradually grew weaker and passed away very quickly. The funeral took place at Abney Park Cemetery on Monday, February 9th, at which in addition to a few relatives and friends, the President of the College, Mr. Slocock, and the Secretary, Mr. Bullock, were present.

(*Continued from previous page.*)

given up active practice, but nevertheless he took a very deep and earnest interest in the profession. A gentleman of remarkable ability and extensive interests, he represented a class of which they were badly in need in that country.

Mr. Howard seconded the resolution, which was supported by Mr. O'Dea and carried unanimously. A vote of thanks was accorded the President for his conduct in the chair.

J. J. O'Connor,
Hon. Secretary.

CORRESPONDENCE.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

The New Meat Inspection Regulations.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Under the new regulations on Meat Inspection issued by the Ministry of Health, power is given to "Local Authorities" to mark all meat passed as fit for human food nd these regulations come into force in April next.

Most of the cities and large towns throughout England and Wales employ a staff of veterinary surgeons to carry out Meat Inspection—but what of the thousands of provincial towns and rural district councils all over the country who do *not* employ veterinary surgeons as Meat Inspectors ?

Here the "Sanitary Inspector" will be the "Officer of the Local Authority" and the local veterinary practitioner ignored entirely. Even if a veterinary surgeon be called in by a local butcher to examine a beast's carcass, the veterinary surgeon will have no authority to pass such a carcass for human food—the Medical Officer of Health for the particular district will send his Inspector of Nuisances along to mark the carcass as fit for human consumption.

Is the Veterinary Profession in England and Wales going to stand by and see the inspection of a no mean portion of the people's food being handed over to laymen ?

The Ministry of Health is to be congratulated on the formation of this new type of Animal Pathologist—no doubt an Inspector of Nuisances is, after all, the correct person to "apply" Animal Pathology !

Perhaps we shall next hear of the Minister of Agriculture bringing a Bill before Parliament to enable Sanitary Inspectors to hold *post mortem* examinations on human beings—perhaps !

The Medical Officer of Health for Carmarthenshire proposes employing a Sanitary Inspector to do meat inspection in the county—there are a dozen veterinary surgeons in Carmarthenshire—are they to be ignored and a layman placed in charge of meat inspection there ? Before next April we shall hear of more Medical Officers of Health appointing lay Meat Inspectors and thus another "source of income" to country practitioners will be gone.

Still, it will be nice for the veterinarian, even if he is not having too good a time of it, to know that his "roast beef" is quite "sound" and passed "fit for human food" by the local Inspector of Drains and Nuisances.—Yours, etc.,
D. J. ANTHONY,

Stourbridge,

Worcestershire,

2nd February, 1925.

Alleged Lead Poisoning in Cattle.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Professor Clough requests members of the Veterinary Profession to discuss in your columns the statements made by witnesses for the defence in a recent law case :—

1. That acute lead poisoning does not occur.
2. One could not get signs of lead poisoning under ten days.
3. Since the bowels of the cows in question were pink, the malady could not be lead poisoning, as lead turned the walls of the gut black.
4. Neither lead nor arsenic would cause irritation of the lining of stomach.

There is a long article in Frohner's *Toxicology* from which, with your permission, I should like to give a few excerpts. "One of the most frequent causes of lead poisoning is the ingestion of lead paint. Literature contains an extraordinarily great number of observations in which domesticated animals, particularly cattle, through eating or licking paints have become ill and have died.

"Lead possesses in all its compounds a local corrosive action (formation of lead albuminate).

"After its absorption lead acts as excitant of the nerve centres of the cortex of the brain (psychical, motor centres), and of the vasomotor centre.

"The most susceptible of all domestic animals towards lead poisoning are cattle.

"One distinguishes an acute and a chronic lead poisoning.

"*Symptoms of acute lead poisoning.*

"The most important local appearances are vomiting, choking, copious flow of saliva, colic, obstinate constipation, tympanites, lost appetite, and milk secretion—seldomer diarrhœa. The general appearances manifest themselves next in brain cortex disturbances, particularly in trembling, convulsions, trismus, and epileptiform attacks, beside which strong psychical excitement, forward pressing, chorea-like movements, as well as—in cattle formal delirium occurs (*mania saturnia*).

"To this stage of excitement follows that of paralysis. "Breathing is embarrassed and accelerated.

"These disease appearances fluctuate between twenty-four hours (per acute, milk fever-like course) and some weeks.

"The *post-mortem* appearances in acute lead poisoning are those of a corrosive gastro-enteritis, reddening inflammation, ulceration of the mucous membrane of the stomach and intestines."

Three pages of the book are devoted to recorded cases of lead poisoning in cattle, and they are mostly those of the chronic type ; the following, however, are descriptive of acute lead poisoning. Two cattle became ill twenty-four hours after the ingestion of red lead, and died in the course of another twenty-four hours. After they had showed lost appetite, evil-smelling diarrhœa, forward pressing, and tumbling about. On *post-mortem* the abomasum was found to be intensely inflamed.

After licking freshly painted-on red lead, three cows died on the same day ; on the next day three others had to be destroyed ; all showed lost appetite, spasmodic jaw movements, forward pressing, weakness behind, muscle trembling ; one cow went mad, one became comatose.

Four cattle licked red lead out of a tin and died suddenly with anthrax-like symptoms. One of them became mad, and died as if struck by lightning.

Mosselman and Hebrant (*Précis de Toxicologie Vétérinaire*) also describe an acute form of lead poisoning, and state that the lesions on *post-mortem* are inconstant, and consist in a gastro-enteritis—intense and in plaques due to the irritant action of the poison. One has described in cattle vesicles, scars, and ulcers, principally in the abomasum, and in the small intestine the mucosa takes a pronounced grey tint.

I think that most members of the profession will agree that Mr. Wardrop's diagnosis was correct.—Yours faithfully, M. R. DAVIS, M.R.C.V.S.

Enfield,

February 7th, 1925.

To the Editor of The Veterinary Record.

Sir,—The evidence in the case mentioned by Mr. Clough in your last issue is truly remarkable. It is a pity that the case was won by the chemists, who have no knowledge of poisoning in animals. The evidence of *the real experts* seems to have been considered of little value, and that of the chemists accepted as gospel. The man who stated that there was no such thing as acute lead poisoning ought to be made to eat his words. That lead does produce irritation of the mucous membrane of the stomach has been known for years. Finlay Dun, in *Veterinary Medicines*, referring to poisoning by lead, has a few remarks on its effects on the stomach.

In eleven horses poisoned by lead: "in all but two cases the villous portion of the stomach presented isolated patches of increased vascularity." In cows: "the mucous membrane of the stomachs and bowels was abnormally vascular and exhibited in places patches of ecchymosis." Glässer, in his *Krankheiten des Schweines*, states that swine are chiefly affected with *acute* lead poisoning from licking lead paint, or from lead acetate in too big doses. Many veterinary surgeons know that a partially empty paint pot has caused quick death in heifers and calves, and the poisoning certainly was not chronic. Reinhardt, in his *Handbuch der Geflügel-Krankheiten*, and after a wide experience, has found that lead poisoning in fowls may be *acute* or chronic. In the former cases one notices loss of appetite, belching, vomiting, salivation, unrest, constipation, stinking diarrhœa, and nervous disturbances. *Post-mortem* appearances: redness, inflammation, and ulceration of the mucous membrane of *the proventriculus* and intestine. Milks and Müller both agree that acute lead poisoning does occur in animals, and that the prominent symptom is gastro-enteritis. Milks says that acute lead poisoning "*is due to its corrosive action before absorption.*" It is surprising that a man can be believed in a court of law who states that "*frenzy and coma were signs which characterise all cattle when nearing death, no matter what the cause of death,*" and yet this man is designated an expert. Such profound ignorance ought to have put him and his evidence out of court altogether.

If what I have stated is the case in acute lead poisoning, what can be argued rationally as regards *lead arsenate*?—Yours truly, G. Mayall, M.R.C.V.S.

Bolton.

To the Editor of The Veterinary Record.

Sir,—Professor G. W. Clough invites discussion on the evidence given in the action Brown *v.* Calvert, in last week's issue.

Almost every country practitioner will bear me out that acute lead poisoning is of frequent occurrence in cattle, especially when turned out to grass in spring.

If lead in any soluble form be present on the pasture, cattle will assuredly find it during the first few days of access to the pasture. The common form in which lead is found is in the various paint preparations or paint scrapings from walls. Acute lead poisoning often occurs on farms where refuse from ashpits has been carted on as a top dressing.

I can give numerous instances of acute lead poisoning where I have been able to demonstrate lead on the pasture and in the stomach contents. My diagnosis in many cases was veritied by analysis:—

(1) A client rented a field from a neighbouring farmer, and in the month of May put on fifteen bullocks, one year and a half old. On the fifth day after being turned into the field two were found dead, and six more were showing all the symptoms of acute lead poisoning—some staggering about the field, some pressing their heads against a stone wall, others down and paralysed. Eight died. On examination of the field, numbers of tins containing both white and green paint were found alongside a wall, having been carelessly thrown over by tradesmen employed in erecting new houses.

(2) The painters of a railway company, after finishing the painting of a small country station, emptied their tins of paint in a field adjoining the station. Three yearling cattle grazing in that field died of acute lead poisoning within a week.

(3) Two cattle belonging to a herd jumped over a fence into a quarry where the refuse from a near-by village was deposited. In a few days both cattle died from acute lead poisoning. Large quantities of white paint were found in the stomachs, and on searching the quarry numbers of tins containing lead preparations were found among the refuse. I could enumerate endless cases such as these.

Regarding chronic lead poisoning, I have not seen a case, but it may happen when animals get very small doses of metallic lead over a long period.

We often read and hear of "Grass Staggers" or "Stomach Staggers" occurring in cattle in Spring when first turned out to pasture. There is no doubt whatever that these cases are nothing more or less than acute lead poisoning.—Yours, etc., John Brown.

Invergordon.

To the Editor of The Veterinary Record.

Sir,—Dr. Clough's letter in your issue of February 7th raises a very important point, though I should have thought that the possibility of acute lead poisoning, at least in cattle, was so well established, that no one at the present time would have queried it. It would appear to me that Dr. Dixon's experience of lead poisoning must have been confined to cases occurring in human beings.

I have had several cases of lead poisoning in cattle (the last one I reported in the *Veterinary Journal* of January, 1924), and, as far as I can remember, all these cases deserve to come under the heading of "acute"; though, as it is seldom possible to say exactly when the lead was ingested, it cannot be stated that they all come under the definition of acute as given by Dr. Dixon, *i.e.*, that death results within forty-eight hours; though that definition would cover a considerable proportion of cases.

I should like to emphasise the following points, which I have observed:—

1. That death often occurs very suddenly. The animal is found dead without illness having been observed: or dies after a short period of acute illness.

2. *Post-mortem* examinations that I have made have never shown any lead discoloration of the gums or viscera, although chemical analysis has shown that lead was present. The abomasum and small intestines have shown areas of acute inflammation, such as one would find with any irritant poison. The stomach and bowel contents may be dark stained if large quantities of lead have been taken, but I have never observed any such staining of the mucous membrane of the abomasum.

3. Frenzy and coma are common symptoms of lead poisoning, but I cannot agree that those signs are common in cattle when nearing death from any cause.

I believe all the cases of lead poisoning I have had have been due to the ingestion of paint, or else white or red lead in its ordinary commercial state. I have had no experience of poisoning from lead arsenate.—Yours faithfully, Ralph Bennett.

Romford,

9th February, 1925.

The Editor acknowledges the receipt of the following:—

Communication from Mr. C. H. Sheather, W. Caudwell, F. Crowhurst, W. B. McAleer and H. H. Truman.

Report of Joint Meeting of the West of Scotland and Ayrshire Division, from Mr. J. Brown.

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